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RAILWAY GAZETTE

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INCORPORATING

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CONTENTS

	PAGE
Editorials	185
Letters to the Editor	188
Publications Received	189
The Scrap Heap	189
Overseas Railway Affairs	190
Signals and Maximum Track Capacity	191
Road Transport Section	193
Railway News Section	203
Personal	203
Transport Services and the War	205
Stock Market and Table	212

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DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

TO CALLERS AND TELEPHONERS

Until further notice our office hours are:—

Mondays to Fridays - 9.30 a.m. till 3.45 p.m.

The office will be closed on Saturdays

Railway Dividends for 1940

THE statements of earnings and dividends for 1940 issued on Wednesday came up to the most optimistic expectations, if indeed in some respects they did not exceed them. The showing made by the Great Western Railway, which is paying a final dividend on its ordinary stock of $2\frac{1}{2}$ per cent., making 4 per cent. for the year or $\frac{1}{2}$ per cent. more than was distributed for 1939, is particularly satisfactory. London & North Eastern stockholders, too, will welcome the fact that 2 per cent. is forthcoming on the second preference stock of that company, against only $\frac{3}{4}$ per cent. for 1939. L.M.S.R. ordinary stock again receives $1\frac{1}{2}$ per cent. and the distribution on Southern preferred and deferred are repeated at 5 and $1\frac{1}{4}$ per cent. respectively. London Transport "C" stock receives a final dividend of $2\frac{1}{4}$ per cent. making 3 per cent. for the first of its financial years which coincides with the calendar year. The net revenue of the controlled undertakings in the pool, amounted to £42,763,000 which compares with the minimum net revenue guaranteed under the financial agreement with the Government of approximately £39,850,000. The gross receipts entering the pool rose by £41,707,000 as compared with 1939, but the growth in relative expenditure absorbed no less than £34,876,000. This expenditure, as is shown in the Government White Paper reproduced at page 208, included provision on account of war damage although the basis of that provision is not indicated. Two of the companies make specific reference in their earning statements to allocations to contingency funds. The L.N.E.R. has set aside £250,000 for this purpose, and the L.M.S.R. £300,000 for "wartime contingencies." The detailed statements by the companies and a table of dividend payments since 1930 are also given at page 208.

* * * *

100 per cent. E.P.T. Disadvantages

On several occasions in these columns the disadvantages to industry, and ultimately to the national economy, of the 100 per cent. Excess Profits Tax have been ventilated. It is all the more satisfactory, therefore, to record that the Federation of British Industries has placed before the Chancellor of the Exchequer an outline of the serious results which must follow the absence of modification of the tax. It points out that manufacturers will have great difficulties to overcome after the war and that they should be enabled now to make reserves against that time. Present demands on cash resources are heavy and the ever-increasing demand for output requires more liquid capital. A.R.P. expenditure, war damage insurance premiums, and taxes have to be met. Some of these might be satisfied temporarily by borrowing from the banks, but these obligations might have to be discharged at a time when permanent finance was hardly obtainable. The federation favours a course which has been suggested on more than one occasion in THE RAILWAY GAZETTE—that the rate of duty should be reduced and the balance retained in the business or applied only to such restricted purposes as the Treasury might permit. The F.B.I. urges an 80 per cent. rate of duty and that the 20 per cent. balance should be used for capital expenditure, payments under the war damage scheme, and additional income-tax payable as a result of the reduction from 100 per cent. to 80 per cent. The federation has also put before the Chancellor detailed proposals aimed at ensuring more equitable standards for assessment of the tax and suggestions on capital expenditure and its reimbursement, the computation of capital, deferred repairs and renewals, contributions under war damage scheme, stock valuations, and similar matters.

* * * *

Overseas Railway Traffics

Further progress has been made by the Buenos Ayres & Pacific Railway during the 31st and 32nd weeks of the current financial year of the company, and during the fortnight there has been an increase of 120,000 pesos. The Central Argentine in the same fortnight showed an advance of 332,050 pesos, but other Argentine railways made a poor showing. The Buenos Ayres Great Southern records a decline of 1,082,000 pesos and the Buenos Ayres Western one of

58,000 pesos; the Entre Rios lost 3,400 pesos. For the 32 weeks of the current year the Argentine North Eastern records a fall of 127,100 pesos, although over the fortnight there was no change on balance.

	No. of Week	Weekly Traffic	Inc. or Decrease	Aggregate Traffic	Inc. or Decrease
Buenos Ayres & Pacific*	32nd	1,840	+ 60	40,498	- 825
Buenos Ayres Great Southern*	32nd	3,010	- 181	65,769	- 6,431
Buenos Ayres Western*	32nd	864	- 72	22,504	- 2,156
Central Argentine*	32nd	1,809	+ 160	46,086	- 11,415
		£	£	£	£
Canadian Pacific	5th	670,600	+ 45,200	3,607,600	+ 533,200
Bombay, Baroda & Central India	47th	319,200	+ 62,100	8,731,725	+ 979,200

* Traffic returns in thousands of pesos.

For the five weeks of the financial year the San Paulo (Brazilian) Railway takings show an improvement of £11,503.

* * * *

Central Railway of Brazil Electrification

We understand that the contract will soon be signed for the conversion of the second section of the Central Railway of Brazil to electric traction, and also that in recent months it has been decided to carry the work further along the line than was originally contemplated. Full details of the conversion of the first section of the Central Railway, which was carried out by the Metropolitan-Vickers Electrical Co. Ltd., were given in THE RAILWAY GAZETTE Electric Traction Supplement of March 4, 1938, and comment was made in our issue of November 15 last on the outstanding financial success which had attended the work. It consisted of electrifying at 3,000 volts d.c. the 5 ft. 3 in. gauge main line from Rio de Janeiro as far as Nova Iguassú on the main line to Barra do Pirahy and the branch line running from Deodoro to Santa Cruz as far as Bangú. The second section which is now about to be carried out comprises the main line from Nova Iguassú to Barra do Pirahy and it has now been decided that electrification should be extended as far as Barra Mansa which is about 46 kilometres beyond Barra do Pirahy on the way to San Paulo. The electrification of the branch line from Deodoro to Santa Cruz will be carried out only as far as Campo Grande instead of Santa Cruz as was at first contemplated. The reason for the extension, which will, of course, add to the value of the contract, is the establishment at Volte Redonde of the Brazilian Steel Company's new works to which we referred on February 7.

* * * *

"C" Licensees in Post-War Transport

The peculiar position occupied by road hauliers holding "C" licences has been a subject of frequent comment in THE RAILWAY GAZETTE. The matter was dealt with at some length by Mr. George Mills, Divisional General Manager of the L.N.E.R., in a Keith Lecture on transport delivered to the Royal Scottish Society of Arts on February 15. After enumerating the courses which transport might take in the future and showing that Government action in all probability would have to cover both road and rail activities, he pointed out that the first and no doubt the highest hurdle was presented by the "C" licences permitting the trader to convey his own goods in his own vehicles. The continuous existence of "C" licences would mean that the cost of this type of conveyance would regulate road and rail rates no matter what Government railways or road hauliers cared to say. He doubted if any Government would desire to say that all inland transport, with the exception of suburban delivery, would have to be conducted by those whose sole business was road or rail haulage. The alternate course to such a declaration was that these "C" licences would be a running sore on the transport body politic. Mr. Mills also pointed out that there were 178,000 "C" licences in operation in 1938 and that there was no limit to their expansion. In his view the continuance of this form of licence would mean not only that rates of haulage would be conditioned by the cost of "C" licences, but that classification would ultimately be damned. Although the trading community might say that the "C" licences were the best safeguard against the possibility of exploitation by professional railway and road operators, transport was so vital to the economic needs of the country that it had to be safeguarded to the extent of obtaining the reasonable return on the capital invested.

Speeding up War Risks Claims

The Board of Trade is making a fresh drive to speed up both payments on account and final settlement of claims under the commodity insurance scheme of the War Risks Insurance Act. Directions prepared by the Board of Trade showing how this may be done are being sent through the board's agents—the insurance companies and Lloyds who issue the policies—to every trader in the country whose stocks are insured under the scheme. About 250,000 traders are insured. Meanwhile, the board has called attention to its readiness to facilitate prompt payments on account of claims where from any cause final assessment may be protracted or a trader is likely to suffer hardship from lack of financial means pending final assessment and settlement. Traders who have already sent full particulars of their claims to their insurance companies or Lloyd's and wish to obtain payment on account are invited to apply direct to the board's assessor dealing with the claim. Where completed particulars of claims have not been given, a trader desiring payment on account should write to the agent—the insurance company or Lloyd's—through whom the policy was issued. No special form is needed, but the policyholder should state (a) the address of premises where loss occurred; (b) date and cause of loss; (c) nature of goods; (d) estimated amount of loss allowing for salvage; and (e) grounds of application for payment in advance of final settlement.

* * * *

High-Tensile Steel for Freight Vehicles

The author of a paper entitled "Field for High-Tensile Steel in Freight Cars," which was read at a meeting of the Railway Club of Pittsburgh, made some interesting observations concerning the effect of high-tensile steels on wagon building and repair costs. He said that, in the case of freight vehicles, the total investment was large, and fixed charges required careful consideration. The effect on the initial cost of the vehicles of using steels of the type named depends on the degree of weight reduction, and experience shows that many applications of high-tensile steels do not increase the first cost. By using low-alloy high-tensile steels, designers have an opportunity of reducing expense on body maintenance account, whether repairs result from mechanical damage or corrosion. Even when substantial reductions are made in the weight of the structure, cars of high-tensile steel, when properly designed, possess a strength equal to or greater than others of conventional heavy construction, whilst at the same time offering superior resistance to corrosion. In concluding his paper, the author remarked that freight railway vehicles built of high-tensile steel afford opportunities for effecting operating and maintenance savings without any substantial increase in capital investment.

* * * *

"A," "B," and "C" Class Stations in India

The distinguishing features of the three official classes of Indian station—the expression also covers block posts, as far as signals are concerned—styled "A," "B," and "C," were discussed, chiefly from the point of view of increasing track capacity, in a paper presented recently to the Institution of Railway Signal Engineers by Mr. A. C. Rose, Deputy General Manager, Madras & Southern Mahratta Railway. India is the country where the outer home signal, under the shorter name of "outer," was first applied on a large scale, but with no cautionary signal in rear, made possible by the good view of the signals generally obtained in that country. The so-called "warner" arm, under the outer, serves as a through running signal, but is also met with as a separate signal, like the English distant, in "A" class layouts. Some years ago the East Indian Railway adopted "A" class working throughout its double lines, on the advice of Mr. S. T. Dutton, then and for many years its Signal Engineer, and other lines had some sections so worked. Mr. Rose, as will be seen from the abridgment of his paper on page 191 is a supporter of "B" class working, and looks forward to the warner signal being eventually

put at braking distance in rear of the outer, a possibility with modern equipment.

* * * *

A Further Consideration

The recognised facilities afforded by outer home—or "B" class—working are, of course, now largely used in Great Britain and have enabled many intermediate block posts, especially those in rear of junctions, to be abolished. This has introduced a factor seldom referred to in discussions on the subject, but nevertheless possessing a certain significance. Signals are unfortunately not always obeyed. If a train ignores the signals at a block post there is often a chance to telephone ahead in time and get some precautionary steps taken, if only by getting people out of a standing train or setting it in motion. If, however, an outer home is ignored, as it was in the Bletchley and several other accidents, there is no time left to do anything, and serious results are almost inevitable. The fear of the outer signal being missed with the station ahead occupied had much to do, among other things, with Mr. Dutton's advocacy of "A" class working. The argument amounts to saying that outer home working needs A.T.C. of some sort to supplement it, in order to compensate for the loss of ability to send a warning ahead.

* * * *

The 4-4-0 in Modern Practice

Among our readers are some who occasionally seek our views regarding the comparative rarity in modern British railway service of the 4-4-0 type locomotive. The well-worn argument that, by reason of their low adhesion, small boilers, and so forth, such engines do not sufficiently realise the requirements of main-line passenger traffic carries a certain amount of weight, but that there is a considerable field for their use in normal daily workings cannot be denied. The "Schools" class locomotives of the Southern Railway are often cited as an example of what can be achieved by a well-designed and suitably proportioned 4-4-0 type, even where the train loads are considerable and the going not always easy. Our own experience with these engines supports the claims often advanced on their behalf, and the remark once made in our hearing that "even the company itself is surprised at what can be got out of them" may not be altogether wide of the mark. The Midland compounds on the L.M.S.R., although of earlier vintage than the Southern "Schools," are speedy and efficient machines with loads of 300 tons, and many excellent performances with others in excess of this have recently been noted. It is sometimes contended that a six-coupled engine cannot be run so economically as a four-coupled one; this is a doubtful claim and one hardly worth considering when endeavouring to make out a case for a further trial of the 4-4-0 type.

* * * *

Fun Between Friends

A trader who recently found a "young female cat" in a wagonload of barley sent him by rail, was moved to write to the railway company concerned in a vein of humorous remonstrance. We are glad to see from copies of the correspondence which have been forwarded to us that the railway rose to the occasion with a reply no less whimsical. It is good that in the stress of war we still find time for courteous jesting and polished repartee. Evidently neither time nor paper are in quite such short supply as is sometimes supposed, and some of us can still be gay without at the same time being grim. We reproduce the trader's letter and the railway company's reply in our Scrap Heap page. What has happened to the cat concerned we are unaware. It has done its part in promoting a little wartime relaxation and has now doubtless taken its inscrutable departure. We recall another cat which shortly before the war made a lengthy journey on the bogie of a coach on a night express from Marylebone to Newcastle, although this one drew attention to its uncomfortable position by mewing until the train was stopped and searched. The cat in the barley wagon seems to have been a more accomplished stowaway.

Use of Railway Proxies

It will be recalled that at the annual meeting of the London Midland & Scottish Railway Company last year Lord Stamp promised to consult with representative stockholders of the company on the matter of the issue of proxy forms. The point had been raised by Councillor Wilson of Accrington who had contended that the custom of sending proxies to certain large stockholders only was unfair to those with a small share in the fortunes of the company. Lord Stamp fulfilled his promise on January 6 last when he and other officials of the company met certain stockholders and representatives of the British Railway Stockholders Union. At that meeting it was agreed that the procedure adopted by the company adequately met the main purpose in so far as it secured the necessary quorum at the general meeting and did so at a minimum of expense. At the same time the stockholders expressed the hope that the directors would be able to make proxies available to the smaller stockholders in cases where they were definitely sought, and on behalf of the L.M.S.R. board willingness was expressed to do so if a satisfactory and economical procedure could be devised.

In the current issue of *The Railway Stockholder*, which records the meeting with Lord Stamp, an article is devoted to the law relating to proxy forms. The matter was dealt with at some length in THE RAILWAY GAZETTE of March 5, 1940. For a meeting of the London Midland & Scottish Railway Company the quorum must not only consist of 20 stockholders, but their aggregate holdings must be of a nominal value of at least £1,000,000. It is for this reason that the custom has grown up among railway boards of sending stamped proxy forms to their larger stockholders; they thus ensure a quorum and also protection against an unexpected or hasty decision by a disgruntled section being forced. The practice of the railway companies in the matter of sending out forms of proxy for their annual meeting is that the L.M.S.R. sends them to holders of £2,500 and upwards of stock; the Great Western to holders of £5,000 and upwards; the L.N.E.R. to holders of £2,000 and upwards; and the Southern, who previously had sent them to holders of £5,000 or more of stock, in 1940 sent them to those who had £10,000 or more. A typical proxy form appoints the chairman, or failing him two directors by name, to vote at the annual meeting in the absence of the signatory and also at any adjournment of the meeting. The presence of the stockholder at the meeting invalidates the proxy and, of course, the stockholder is at liberty to withdraw the proxy at any time, or to issue one in favour of another nominee. At special meetings concerned with railway Bills, which by statute have to be approved by the stockholders concerned, another form of proxy is used. These assemblies, which have come to be known as Wharnccliffe meetings, have to be summoned by newspaper advertisement and by circular to each proprietor; with the circulars a blank proxy form is enclosed. It is enacted that in the case of a Wharnccliffe proxy the stockholder must not be told in whose favour the proxy should be granted. Not only is a Wharnccliffe form sent unstamped, but by law it has to be sent to all members of the company, and there is thus an important difference in law as between proxies of ordinary annual meetings and those for the special Wharnccliffe meetings. For the first there is no legal obligation to send out any proxy forms, whereas for the second a form must be sent to each stockholder.

Councillor Wilson, at the annual meeting of the L.M.S.R. in 1939, sharply criticised the practice of sending proxy forms to larger shareholders and alleged discrimination against the smaller proprietors. Mr. Wilson regarded the practice as a contravention of certain sections of the Companies' Clauses Act, 1845, and took his case to the Court of Chancery in 1939. Mr. Justice Simonds decided that there had been no infringement of any statutory provision, for the Act neither imposed an obligation to send out proxy forms to all stockholders, nor prohibited the sending of proxy forms to some and not to others. Mr. Justice Simonds also held it had been established that selecting the stockholders who received proxy forms had two objects; to ensure that the necessary quorum was obtained and to avoid the substantial additional expense of sending proxy forms to every stockholder; his decision was affirmed by the Court of Appeal. The Master

of the Rolls summed up the issue by saying that "the test appears to be whether the directors are acting *bona fide* in what they honestly and reasonably believed to be in the interests of the company; if they were acting for their own purposes very different considerations would apply." So far from the railway boards being criticised by stockholders in their practice of restricting the members to whom proxy forms are sent, it would seem that the general body of proprietors have good cause for appreciating the motives of economy which inspire the directors. In the case of the L.M.S.R. the sending of stamped proxy forms to holders of £2,500 of stock involved the company in a cost of about £400; to have sent proxy forms to more than 200,000 stockholders would have involved £5,000. Since the necessary quorum of proprietors can readily be secured by the smaller outlay it would appear both useless and improvident to approach every one of the proprietors of the company.

* * * *

Great Northern Railway (Ireland)

TOTAL gross railway receipts in the year 1940 increased by £186,148 and all the main sections of traffic contributed to the improvement. The company is to pay the interest on the consolidated 4 per cent. guaranteed stock for the year 1938. Among passenger train traffic there was a gain in ordinary passenger takings of £43,889 at £446,671. Season tickets yielded £65,775 or £13,287 more than in the previous year, and workmen's tickets at £10,272 were higher by £3,313; in all there was an advance in receipts from passengers of £60,489 at £522,718. Revenue from mails was £38,138 compared with £38,111 and parcels and excess baggage returned £58,921 or £11,259 less. After allowing for expenses of collection and delivery, total passenger train receipts at £642,270 were up £55,644. The proportion of passenger train

receipts to total traffic receipts declined from 50.06 per cent. to 47.41 per cent. Goods train traffic rose from £585,261 to £712,519 to which merchandise, less expenses of collection and delivery, contributed £526,013 against £443,369. Live-stock receipts totalled £110,064 compared with £80,392 and coal, coke and patent fuel £50,203 against £41,952. Other minerals brought in £26,239 against £19,548 in the previous year. Total traffic receipts were therefore £1,354,789 or £182,902 more. After allowing for mileage, demurrage, and wagon hire (balance), joint lines, and miscellaneous, total receipts from railway working were £1,407,524 compared with £1,221,376.

Expenditure was £180,205 greater at £1,297,175, leaving net receipts up £5,943 at £110,349. Road transport yielded gross receipts of £154,910 or £4,320 more, but there was a rise of £8,058 at £147,765 in expenditure so that net receipts were £3,838 lower at £7,145. Hotels and catering net receipts were lower by £392 at £2,388. The following table gives the general financial position for the past three years:—

	1938	1939	1940
Total expenditure on capital account ...	£ 10,052,929	£ 10,052,929	£ 10,052,929
Gross receipts from businesses ...	1,311,038	1,424,655	1,621,789
Revenue expenditure on ditto ...	1,269,231	1,306,486	1,501,908
Net receipts of ditto ...	41,807	118,169	119,881
Miscellaneous receipts (net) ...	28,811	30,758	34,231
Total net income ...	70,618	148,927	154,112
Interest, rentals, and other fixed charges	131,188	141,352	117,186
Dividends on guaranteed stock	—	—	34,771
Appropriation from general reserve ...	25,000	—	—
Brought forward ...	—	Dr. 34,269	Dr. 26,694
Carried forward ...	Dr. 34,269	Dr. 26,694	323

Mileage run by the company's steam locomotives increased from 4,497,316 to 4,799,146, and by diesel railcars from 379,391 to 383,649, but by diesel railbuses it declined from 40,907 to 38,493. Locomotive running expenses rose from £263,814 to £328,260 and traffic expenses advanced from £303,802 to £341,557.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Reality and Abstraction

24, Greville Place, N.W.6
February 6

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR,—You state in an editorial note of January 24 that "the waging of war is not fundamentally a matter of money," but whilst it is true that the prosecution of our war effort is not dependent on financial policy, nevertheless this policy is of great importance since by means of it is determined how the sacrifices demanded of the civil population during the war shall be distributed. The Government is taking an increasing quantity of our industrial output for war needs, leaving a diminishing amount for civilian uses, and to pay for this the Government must acquire a similar proportion of the national income, which it can do by means of taxation, borrowing, and inflation. To the extent that the Government does not obtain sufficient money by taxation and borrowing it must do so by inflation, but if this process is carried to excess it becomes socially harmful since it unjustly penalises certain classes of people, and by producing rapid increases in prices it can be the cause of industrial unrest and therefore of interference with the war effort, whilst it can add to the difficulties of post-war problems.

The controversy aroused by the increase of railway charges which were necessary to meet rising prices is indicative of the trouble that lies ahead if inflation is not kept on a low level. Secondary though it is, financial policy should be designed to spread sacrifices in the way which causes least harm to the community, and this can best be achieved by raising taxation and borrowing to the highest level possible, so that inflation shall be at a minimum.

Yours faithfully,

ALUN WILLIAMS

[Our correspondent's letter exemplifies the change in emphasis on the purpose of taxation. Formerly, it was gene-

rally accepted to be the raising of revenue to cover Government expenditure so that the annual budget could be balanced. Now that the enormous expenditure of war admittedly makes budget balancing impossible, the prime function of taxation is being seen as that of limiting personal expenditure. This being so, our correspondent is incorrect in saying that the Government "must acquire a similar proportion of the national income" to pay for war supplies. Payment for these is made by bank loans, and the cost is already something like three times as much as the total revenue which can be collected from the public as taxation and savings combined. The chief purpose of taxation today is to prevent competition between the Government and the public for the output of industry which is insufficient to satisfy both fully. The Government demand must have priority, and the public can, therefore, be allowed to obtain only such goods as are surplus after the requirements of the Government have been met. This end might be achieved by various methods, one of which would be to extend the military rationing system to the general public. In effect, Germany seems to have adopted this solution without, however, abolishing the monetary system; all consumer goods are rationed and such monies as the public has in excess of those required for the purchase of their rations are sterilised where they are not absorbed by investment or taxation.—Ed. R.G.]

VEGETABLE GROWERS AND RAILWAY CO-OPERATE.—Prior to the war, vegetable growers in South-East Essex disposed of most of their produce in the Southend markets, where in recent months demand has fallen off. To assist them in reaching new markets, the L.N.E.R. suggested that the growers should band themselves into an association so as to allow the small loads of several members to be forwarded as bulk consignments, thereby taking advantage of lower transport rates. The South-East Essex Growers' Marketing Association was therefore formed. The L.N.E.R. introduced special rates for the produce, provided extra road cartage services, and paid special attention to working the traffic. The association has now written to the L.N.E.R. to express its thanks for the suggestion and appreciation of the assistance given.

PUBLICATIONS RECEIVED

Scientific Facts and Data.—Negretti & Zambra, the well-known London scientific instrument makers, have published a fascinating booklet under this title. It is full of information about scientific facts, such as that the Gulf Stream, which off the Florida coast is 50 miles wide and 2,100 ft. deep, has a temperature of 81° F., and, moving at 5 m.p.h., takes 5 or 6 months to reach Europe, by which time its temperature is reduced to 40° F., and its depth increased to 5,400 ft. Presumably its width is by that time hundreds of miles. We find justification for the well-known L.N.E.R. advertisement in the statement that the driest district in England lies between the Humber and the Thames, with an annual rainfall of less than 25 in. The driest parts of Scotland are the Firth of Forth and the Moray Firth areas, also served by the L.N.E.R. Nevertheless, Scarborough boasts (or laments) the heaviest rainfall on record in this island, on August 6, 1857. Other remarkable British meteorological phenomena are: Snowflakes of 4 in. dia., which fell at Chepstow on March 24, 1888; a snowstorm in the Isle of Wight on July 11 of the same year; the driest

English summer, in 1885, with a rainfall at Greenwich of 3.63 in., and the wettest, in 1879, with 12.99 in.; a tidal wave, 20 ft. high, on July 20, 1929, which came in from a calm sea and swamped the coast round south-east England; and waves breaking on cliffs on the Scottish coast with an energy of 3 tons per sq. ft. during storms. Of direct railway interest there is little except that the temperature in 1904 outside the Simplon Tunnel (the longest in the world, 12½ miles) was 42.1° F., whilst at the centre it was 88° F. During its construction the temperature of the rock was found to exceed 122° F.

The Railway Handbook, 1940-1941. London: The Railway Publishing Co. Ltd., 33, Tothill Street, S.W.1. 8½ in. × 5½ in. 96 pp. Paper covers. Price 2s. 6d.—“The Railway Handbook” is designed to provide the railway student with a concise collection of statistics and other information. The seventh edition has just been published and, apart from tables giving international comparisons, the data are confined mainly to Great Britain and Ireland. An exception is made in the

statement regarding the electrification of steam railways, where it has been deemed necessary to cover the whole world in order to present a complete picture of this increasingly important development. Many of the sections have again been extensively revised, particularly those relating to railway speeds and non-stop runs. By the courtesy of the Minister of Transport the census figures of railway employees for the week ended March 11, 1939, which were not published by the Ministry, are given in “The Railway Handbook.”

Hot Tinning.—With this as its title the Tin Research Institute has recently issued a brochure giving a comprehensive account of the different processes used, with some explanations of the various factors which influence the quality of the coatings produced in hot-tinning fabricated articles of various kinds. The author is Mr. C. E. Homer, B.Sc., Ph.D., and the book contains in its 28 pages, measuring 10½ in. × 8 in., a considerable amount of informative material accompanied by some interesting half-tone illustrations of plant and sections of tinplate at various stages of treatment.

THE SCRAP HEAP

A NEW RAILWAY SERVICE ?

The following letter from a trader was recently received by a district manager of the L.N.E.R. :—

DEAR SIR,—You have many difficult problems to solve, and I must apologise for adding to your burden, but I should like your guidance in dealing with a memorandum received yesterday from a firm of vinegar merchants in the Midlands which I quote textually :—

“In the railway van containing barley, Lot No. 2100 ex-Loughborough, we found a young female cat, which we are holding for your instructions.”

Will you please consider the following points :—

Did the agent at the loading station exceed his duty in forwarding livestock without proper instructions, and in any case, what right had he to “part lot” the animal with other goods before receiving our authority to do so? On the other hand, has some new instruction been issued under the auspices of Mr. W. McA. Gracie’s Committee on Pest Infestation. That report states that the agricultural merchant’s goods should be guarded against “rats and mice by which their premises are usually over-run” (p. 39). Incidentally, merchants generally would have preferred the word “occasionally” to “usually.” In this case, why were not proper instructions (accompanied by a tie-on label attached to a blue ribbon) issued for the return of the animal, so that our customers were not placed in the embarrassing position in which they find themselves.

Was a proper supply of food put in the van from that which your beneficent directors authorise as cat rations? If not, are you not taking a risk that the Society for Cruelty to Dumb (sic) Animals may have something unpleasant to say. There is also the question of ownership of the

animal. You will note that our friends are “holding it for instructions.” They evidently wish to protect themselves against being implicated as receivers of stolen goods.

Finally, the explanation may be a roving instinct in the animal herself. It is just possible that having escaped a watery ending in the stable bucket, she came to the conclusion that a safer future lay in “fresh fields and pastures new,” and that Wagon No. . . . was her means of attaining her object.

To the foregoing letter the railway concerned replied as follows :—

DEAR SIR,—We were very interested in your letter of November 16, from which it seems certain that you are unaware of our latest service (Trained Cat Service) which, though still in the experimental stage, will solve, we hope, many of the problems which have from time to time beset the railway company, and will, in addition, be of considerable benefit to the trader.

You have no doubt heard of the many facilities that have been inaugurated in recent years such as railway C.O.D.; door-to-door conveyance; household removals; and registered transits, more often called the Green Arrow service. The latter you will remember is a scheme by which goods are brought within a specialised control system whereby every point receives an advance advice of its passage and a trained staff keeps constant watch until the goods are delivered; all for the sum of 2s. 6d. At a future date you may, for a modest sum, be able to have the services of a fully trained cat to watch your traffic from the time it is loaded in the wagon to the time it is unloaded at the other end.

Specialty selected cats taken from the company’s feline staff would be trained and would have to undergo a course of

railway geography, pest infestation, trap baiting, and general tactics in connection with rat stalking and mouse play. In accordance with the railway company’s new policy they would be distinguished by a blue ribbon which would take the place of the red ribbon now in force (more commonly known as red tape). The fee would cover the upkeep of the cat and include a 10 per cent. contingency to cover travelling expenses, increased cost of living, lodging allowance when away from the base station, and other incidentals incurred whilst on company’s business.

This new facility would be known as the Trained Cat Service or “T.C.S.” It is hoped to increase the stud of specially trained cats in the near future, hence the employment of female cats in the initial stages.

P.S.—In view of the experimental nature of this new service, we are pleased to inform you that there will be no charge made on this occasion, but as we do not wish our competitors to be cognisant of this scheme, we earnestly request that you will treat this letter confidentially.

P.P.S.—After further searching enquiries we find that this particular cat that was found in your wagon was acting without instructions; it is even doubtful if it was acting under our instructions at all. Accordingly we must decline liability for its disposal, and would respectfully suggest that you up-lift it for your own purposes when in that district.

* * *

The standard American code of locomotive whistles includes the following :—

Approaching a level crossing : two long, one short, and one long blast.

Approaching a station or junction : one long.

Alarm for persons or animals on the track : succession of short toots.

Apply brakes, stop : one short whistle.

Release brakes, proceed : two long whistles.

Flagman protect rear of train : one long and three short.

Call for signals : four short.

Stop at next station : three short blasts.

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

CANADA

The C.N.R. in 1940

[Salient features of Mr. Hungerford's statement upon the Canadian National Railways and Trans-Canada Air Lines in 1940 were briefly mentioned in these columns last week, but the following are further extracts from it.—Ed. R.G.]

The Canadian National early took steps to ensure that its supply of wagons and locomotives would be adequate. Its shop programmes on repair and rehabilitation have brought the number of units available for service up to a very high percentage figure. During 1940, 2,760 new box wagons, 500 flat wagons, 100 refrigerator wagons, 30 mail, express, and baggage wagons, 150 ballast wagons, and 25 heavy-duty steam locomotives were added to the equipment of the railway. The box wagons are of all-steel construction, with a capacity of 40 tons, similar in design and equipment to those purchased during recent years. The flat wagons, 52 ft. long and carrying 56 tons, are supplementing equipment being used in handling airplane sections and also lumber from Pacific Coast sawmills to Atlantic Coast ports. Locomotives purchased are of the "6100" class, primarily designed for freight service, but also suitable for heavy passenger service as described and illustrated on page 384 in our issue of October 11 last.—Ed. R.G.]

Trans-Canada Air Lines : Steady Expansion

In January, 1940, the Trans-Canada Air Lines Company extended its service from Montreal to Moncton, where air connections are made for Halifax, Saint John and Charlottetown. April saw the inauguration of a second daily service between Montreal and Vancouver. By July London and Windsor had been joined to the T.C.A. network by direct service. In August a fourth round trip was added to the Toronto-Ottawa-Montreal service.

To the properties of the company were added during the year a hangar at Moncton and an addition to the shop building at Winnipeg. Work was begun in the autumn on a hangar at the new Montreal airport now being constructed at Dorval. This field will accommodate civilian flying and replace the St. Hubert airport, which is being used for military flying operations.

UNITED STATES

The City of Miami

[On page 352 in our issue of October 4 last, we briefly mentioned the forthcoming inauguration by the Illinois Central Railroad of a new streamline coach train to run between Chicago and Miami, Florida. The following is a more detailed description of this train.—Ed. R.G.]

Known as the City of Miami, the new train was on exhibition on December 17 at Van Buren Street suburban station, Chicago. The locomotive consists of two 1,000-h.p. diesel-electric sets mounted in a four-wheel-bogie car, together with auxiliary motors for air-conditioning, lighting, and heating. Behind this car are seven luxurious coach cars named, after flowers, namely: *Bougainvillea*, a composite baggage, staff-sleeping, and day coach; *Camellia*, a day coach with two women's lounges and nurse's room; *Japonica*, a similar coach but having a women's and a men's lounge; the dining car *Palm Garden*; *Hibiscus* and *Pointsettia* coaches similar to *Japonica*, and a tavern-lounge-observation car named *Bamboo Grove*. The total seating capacity is 254 exclusive of the dining car which seats 48 and the tavern-lounge-observation car seating 54 passengers.

Colour Schemes, Passengers' Comfort and Refreshment Tariff

Each coach has an individual colour scheme, luxurious furnishings, individually adjustable seats, glareless lighting controlled by each passenger independent of and without annoying his neighbour, and ample washing and lavatory accommodation. In the dining car the charges for meals are: breakfast 50 cents (say 2s. 6d.), lunch or dinner 60 cents (3s.). *Camellia* is reserved for women and children and is served by a stewardess and registered nurse. All seating is reserved in advance. Public announcements are made on the train of news items, weather reports, scenic attractions and station stops. The latest improvements in air-conditioning are embodied throughout the train, on which pillows can be hired for 25 cents (1s. 3d.).

Time Schedules

The journey time from Chicago to Miami is 29½ hr., and the fare \$23.25. The train leaves Chicago every fourth day at 9.40 a.m. arriving at Miami at 4.10 p.m. the following day. It leaves Miami again the same night at 6.25 p.m. and reaches Chicago at 10.55 p.m. on the third day. The next round trip starts at 9.40 a.m. on the fourth day. The following intermediate cities are served: St. Louis (by connecting train), Birmingham, Jacksonville, and Palm Beach.

The Corresponding Trains

The South Wind, owned by the Pennsylvania Railroad, and the Dixie Flagler, owned by the Florida East Coast road, leave Chicago on the two intermediate days at the same time of day as the City of Miami, and, though traversing different routes, also arrive at Jacksonville and Miami at the same times on successive days. In the north-bound direction, also, the overall

timings are the same for all three trains.

FINLAND

New Chord Line Completed

In October last the State Railways completed the 101-km. (83-mile) chord line from Varkaus to Viinijärvi, thus connecting the north-eastern group of lines, centring upon Joensuu, with the main line from Haapamäki to Piekasäki and Parikkala, the new frontier station near Elisenvaara.

SCANDINAVIA

Progress of Electrification

Electrification in Norway and Sweden, interrupted or slowed down by the war, is once more in steady progress. In Sweden, the Långsele-Vännäs, the most southerly line in the Luleå Division is in course of electrification, and on September 20, 1940, the Långsele-Mellansel section, 91 km. (57 miles) was brought into electric operation; work is also in progress on the Mellansel-Vännäs section, 120 km. (75 miles). Electrification to Boden, the junction with the Luleå-Narvik electric line is to follow.

Main-line electrification in Norway, on the line Oslo-Fredrikstad-Swedish frontier (at Kornsjø) was resumed after a short interruption following the invasion, and electric trains have been running as far as Sarpsborg, 109½ km. (68½ miles) from Oslo, since July 20, 1940; a further section of 27 km. (17 miles) to Halden, was scheduled to be brought into use by the end of 1940.

Night trains between Oslo and Gothenburg and Trälleborg were reinstated as from October 6, 1940, and the Malmö-Copenhagen ferry service, interrupted since May, 1940, has been in operation again since the end of November. Some Kr. 2,500,000 have been earmarked by the Danish Government for port extensions at Elsinore, and the new Rødby-Femern ferry.

ROUMANIA—BULGARIA

New Danube Train Ferry

It is reported that a Danube train ferry service will be opened this spring between Giurgiu Guirgevo on the Roumanian bank and Rouschouk (Russe) on the Bulgarian bank of the river. The Bulgarian and the Roumanian State Railways had agreed each to supply one ferry steamer and the Bulgarian vessel is now ready for service. This ferry will considerably shorten the distance by rail between the two capitals, Sofia and Bucharest. Up to the present the only through rail communication between them is via Guebedje on the Sofia-Varna line near Varna, and Medjidia on the Bucharest-Constanza line near that port. A 59½-km. (37½ mile) section of this connecting line from Boteni northwards has been transferred from the Roumanian to the Bulgarian State Railways. No other railways were concerned in the recent transfer of Dobruja territory.

SIGNALS AND MAXIMUM TRACK CAPACITY

*A discussion on the facilities afforded by
"A," "B," and "C" class stations**

By A. C. ROSE, Deputy General Manager, Madras & Southern Mahratta Railway

THE basic railway operating problem may be described as "to move the largest necessary number of the smallest feasible variety of the heaviest workable trains in the shortest possible time, with the highest standard of safety, at the lowest economic cost for the fairest annual revenue." It is obvious that the various factors interlock in such a way that the practical answer must be in the nature of a compromise. To solve the problem so far as block working is concerned, and ignoring the suburban electrified services where automatic block working is in force, three classes of station have been evolved which may be roughly described as follows:—

"A" Class.—Ordinary British practice, suitable for Indian double-line fast, frequent, regularly spaced trains with little station work, such as shunting, to be done; unsuitable for junctions.

"B" Class.—Modern British junction practice, suitable for irregularly spaced trains with considerable station work to be done; Indian double- and single-line stations and junctions.

"C" Class.—Former British practice when it was necessary to split up a long double-line block section into two or more sections, so that one train could follow another more closely, hence the meagre signalling equipment of warner and home only, to deal with trains not booked to stop.

"A" class working, it will be seen, is a copy of ordinary British practice of 30 years ago and is illustrated in Fig. 1 (a) and (b), which show the simplest forms of double- and single-line stations. The definition of an "A" class station is found in the General Rules for Indian Railways as follows: "Where permission to approach may not be given for a train unless the line on which it is intended to receive the train is clear for at least a quarter of a mile beyond the home signals, or up to the starting signal." This is supplemented by rules, the most important of which are as follows:—

"The line shall not be considered clear, and permission to approach shall not be given unless: (a) the whole of the last preceding train has arrived; (b) all signals have been put back to "on" behind the said train; (c) the line on which it is intended to receive the incoming train is clear up to the starting signal, and (d) all points have been correctly set and all facing points have been locked for the admission of the train on the said line."

"When permission to approach has been given no obstruction shall be permitted outside the home signal, or, on the line on which it is intended to admit the train, up to the starting signal."

"In thick or foggy weather, a train waiting for an authority to proceed shall not be allowed to draw out to a starting signal in an advanced position, or up to an advanced starting."

Effect on Capacity

As regards the double-line, it is evident that the capacity of the station is limited to one up and two down trains. By adding an up advanced starting, the up capacity would be increased to two but the actual improvement would not be 100 per cent., as capacity between starting and advance is not so useful as capacity between home and starting, since the latter is platform space and frequently shunting space. The capacity required is of such a character that a train may be permitted to do whatever station work is needed, while another is approaching. The layout, Fig. 1 (a) is not suitable for this purpose, although probably a sample of a large number of stations.

As regards Fig. 1 (b) capacity is still more restricted, as only two trains can be accommodated. If "line clear" has been given on each side it is frequently necessary to stop

both trains at the homes and draw them forward to the platforms. To avoid such delays, sanded dead-ends were being used on new British single lines built in 1908, to provide an over-run, as shown by the dotted lines. The major disadvantage, however, is that with the platform line occupied, "line clear" cannot be given for a following train, which may be a goods and unable to arrive at the station until long after the platform line has been cleared. It is evident that such a design does not aim at using the single line to the extent of its capacity, as two following trains

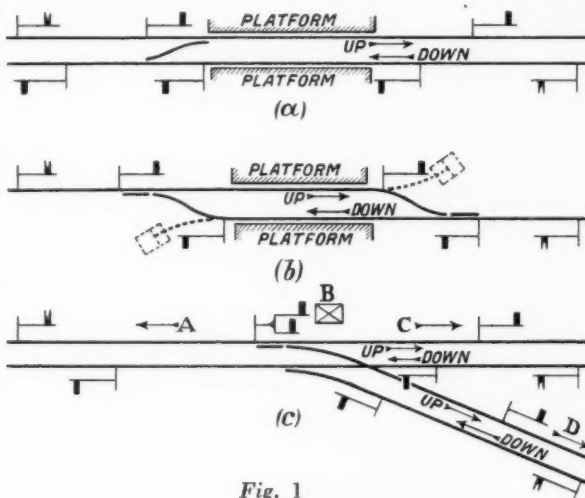


Fig. 1

may be kept miles apart, whereas safety requirements would be met by a reliable warning of conditions ahead and a braking distance.

Conditions at an "A" class junction are even worse, as shown in Fig. 1 (c). Assuming we are in signal box B and give "line clear" for a down train to come from C, then no down train can leave D until the train from C has been brought to a stand at the down main home, or the train from C has gone $\frac{1}{4}$ mile beyond the home signal applying to a down train from D, or until the "train out of section" signal has been received, if the next home signal is within the clearance point of B. "Line clear" may simultaneously be given by B to A if the junction facing points are set and locked for the straight and the line is clear for a quarter of a mile beyond the home signal applying to the train from A, or "train out of section" has been received if the next home signal is within the clearance point of B. It is evident that only two trains can be dealt with by B at one time, as follows:—

$$\left\{ \begin{matrix} A \text{ to } C \\ C \text{ to } A \end{matrix} \right\} \text{ or } \left\{ \begin{matrix} A \text{ to } D \\ D \text{ to } A \end{matrix} \right\} \text{ or } \left\{ \begin{matrix} A \text{ to } C \\ D \text{ to } A \end{matrix} \right\}$$

Fig. 2 (a) will demonstrate how "B" class working increases the capacity of a junction and obviates the necessity for the "section clear but station or junction blocked" signal. This figure is the same as Fig. 1 (c), but with the addition of outer homes, providing an adequate distance between opposing movements and making possible the giving of simultaneous "line clear" signals with safety.

Indian Practice

Indian junction signalling, although in principle as shown in Fig. 2 (a), differs from it in an important respect, in that it is the practice to combine the outer home with the distant on one post and call the combination the outer and warner, as shown in Fig. 2 (b). This economical arrange-

* Abridgement of paper presented to the Institution of Railway Signal Engineers

ment has given good service for many years, due to the fact that speeds have not been high; with increasing speeds, however, it is evident that the margin of safety is narrowed in comparison with that provided by the arrangements shown in Fig. 2 (a). It is logical to anticipate that since signals can now be safely worked at considerable distances by double wire mechanism, or by power derived from primary batteries, the separation of outer and warner into outer home and warner on separate posts will follow, thus giving drivers adequate warning and braking distance and enabling them to maintain the maximum speed with the maximum safety, with consequent reduced time in the block section, equivalent to increased track capacity. It is evident therefore that "B" class working permits of the

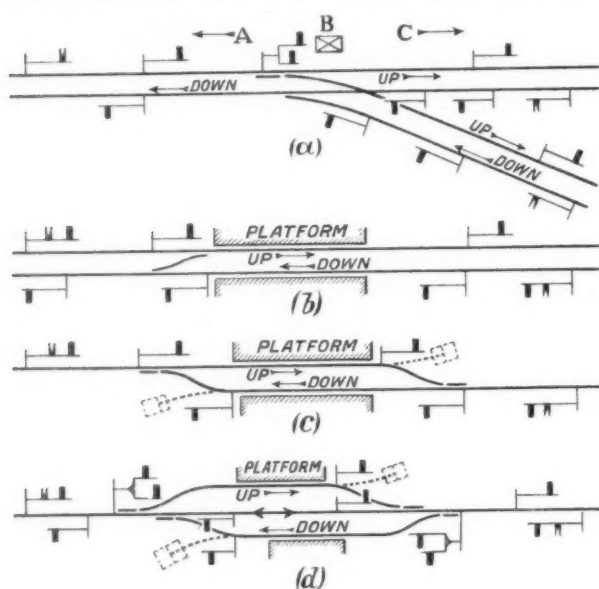


Fig. 2

closer spacing of trains because, instead of the "one train one block section" principle, expressed in the definition of the absolute block system in the British regulations for train signalling, such working means "one train in one block section plus at least one train in each station." The definition mentioned above is as follows: "The object of absolute block signalling is to prevent more than one train being in a block section between two signal boxes on the same line at the same time."

In order to complete the picture, diagrams (b) and (c) Fig. 2, are shown to correspond with (a) and (b) Fig. 1, but with signals for "B" class working, with the outer and warner on the same post, in accordance with present Indian practice. The principles of track capacity are not affected by the improved arrangement of separated outer home and warner, although the safety factor is increased.

Advantages of the "B" Class Station

From Fig. 2 (b) it is evident that with one up train at the platform, "line clear" can be given for a following up train, as there is an adequate distance between the outer and the home. Frequently the train at the platform will have gone on its way before the second train can arrive. Even if the first has not proceeded the second is brought as far as possible on its way, instead of being detained at the station in rear. The same applies on the down line, except that three down trains can be dealt with, the first between the starting and the advanced starting, the second between the home and the starting, and the third in the block section. An objection may here be anticipated. It is often said that it is better to keep trains evenly spaced than bunched. This is a theoretical consideration which is not borne out in practice on a line carrying mixed traffic, where train speeds and station requirements vary. Since bunching

increases track capacity and since operating requirements are not static, "B" class working seems to be the obvious solution to the problem of getting the most out of the permanent-way and rolling stock.

The advantages on the single line are even greater as may be seen from Fig. 2 (c) where instead of two trains, four trains can be handled instead of two, viz., one up at the platform, one up in the block section, and the same for the down direction, with the minimum of stoppage and shunting. Considerably greater capacity and ease of working are provided with the design shown in Fig. 2 (d) which provides for run through trains on the straight and increases the capacity to five.

On the Indian broad (5 ft. 6 in.) gauge lines all trains are vacuum braked and speed does not exceed 70 m.p.h.; the normal maximum speed is probably 60 m.p.h. On the metre gauge lines speed is restricted to 45 m.p.h. and goods trains are not ordinarily fitted with continuous brakes. Single lines with crossing stations spaced approximately four or five miles apart may be regarded as normal practice, although there are hundreds of miles of double track and some sections of quadruple track. The ruling characteristics may be stated in the following order of priority; safety, capacity, economy, comfort, speed. The signal engineer's contributions to the first three are of major importance; the fourth he must leave to others. As regards the fifth, that modern favourite, he co-operates within the rather restricted framework composed of varied operating requirements and the limitations of the best braking systems.

(See editorial notes on page 186)

Important Transport Legislation

Below is given a selection of the more important Acts of Parliament relating to transport since the war of 1914-1919. The Royal Assent date is given in brackets after the name of the Act.

- 9 & 10 Geo. 5, cap. 50. Ministry of Transport Act. (August 15, 1919.)
- 11 & 12 Geo. 5, cap. 55. Railways Act. (August 19, 1921.)
- 18 & 19 Geo. 5, cap. 101. London Midland & Scottish Railway (Road Transport) Act. (August 3, 1928.)
- 18 & 19 Geo. 5, cap. 102. Great Western Railway (Road Transport) Act. (August 3, 1928.)
- 18 & 19 Geo. 5, cap. 103. London & North Eastern Railway (Road Transport) Act. (August 3, 1928.)
- 18 & 19 Geo. 5, cap. 104. Southern Railway (Road Transport) Act. (August 3, 1928.)
- 19 & 20 Geo. 5, cap. 54. Great Western Railway (Air Transport) Act. (May 10, 1929.)
- 19 & 20 Geo. 5, cap. 55. London & North Eastern Railway (Air Transport) Act. (May 10, 1929.)
- 19 & 20 Geo. 5, cap. 56. London Midland & Scottish Railway (Air Transport) Act. (May 10, 1929.)
- 19 & 20 Geo. 5, cap. 57. Southern Railway (Air Transport) Act. (May 10, 1929.)
- 20 & 21 Geo. 5, cap. 43. Road Traffic Act. (August 1, 1930.)
- 23 & 24 Geo. 5, cap. 53. Road & Rail Traffic Act. (November 17, 1933.)
- 24 & 25 Geo. 5, cap. 50. Road Traffic Act. (July 31, 1934.)
- 24 & 25 Geo. 5, cap. 15. Motor Vehicles & Road Traffic Act (Northern Ireland). (June 28, 1934.)
- 25 & 26 Geo. 5, cap. 15. Road & Railway Transport Act (Northern Ireland). (July 16, 1935.)
- 23 Geo. 5, cap. 14. London Passenger Transport Act. (April 13, 1933.)
- 24 & 25 Geo. 5, cap. 59. London Passenger Transport (Interim Financial Arrangements) Act. (July 12, 1934.)

The legislation tabulated above covers the formation of the Ministry of Transport and the grouping of the railways into the present four major systems; it also deals with the road transport and air transport powers of the railway companies. Recent road and rail legislation in Great Britain and Northern Ireland is also covered, as are the main measures relating to the establishment and operation of the London Passenger Transport Board.

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

War Effect on Tramways

THERE can be little doubt that the arrears of maintenance which accumulated during the war of 1914-19 played an important part in the decision of many of the smaller tramway authorities subsequently to abandon their systems in favour of motorbuses rather than face extensive renewals at post-war prices. The process of tramway abandonment in Great Britain, once begun, continued during the next two decades and at the outbreak of the present war the only tramway survivors in this country were large and important urban systems. Some undertakings which were in process of abandoning their systems then found it desirable to reopen sections of line that had been closed but not dismantled, in view of the need for conserving liquid fuel. It thus appeared in the early months of the war that a fillip was being given, even if only temporarily, to the tramway industry, with its reliance upon home-produced electric power. Subsequently, however, intensive aerial bombardment demonstrated the vulnerability of a tramway system, for comparatively minor road damage could result in widespread disorganisation of tramway services in view of their lack of flexibility. In some cases at least it appears that the result will be the abandonment of tramway systems or sections of line that have been damaged by aerial bombardment, and future reliance placed upon more mobile vehicles. Coventry provides a particularly striking example of these wartime effects on tramways. There the Broadgate—Stoke route had been closed on August 12, 1939, and lay derelict for just over a year, but as a wartime measure, in order to conserve fuel, the Coventry Corporation decided to reopen the route, and it was duly brought into commission again on August 18, 1940. It was expected that the saving of fuel would enable some bus services to be extended. Then Coventry was subjected to the intensive aerial bombardment of November 14 and the tram service was disorganised. Subsequently the recommendation of the Transport Committee was adopted to the effect that the remaining tramway services in the city be discontinued for the duration of the war. It was stated that there were sufficient buses available to deal with the traffic requirements of the city provided the industrial working hours were staggered, and the view was expressed that it was unlikely the tramway services in Coventry would ever be restored.

The Melbourne Cable Trams

ACCORDING to the report of the Melbourne & Metropolitan Tramways Board for the year to June 30 last, the conversion to motorbus operation of the final section of the cable tramway system was to have taken place in March, 1940. In order to co-operate with the Government in the conservation of fuel oil, however, it was decided to defer the changeover until the cables were no longer usable. The last cable routes, 7.8 route miles in length, were actually replaced by motorbuses on October 26, 1940. The first section of this once-famous and extensive system of cable tramways was opened on November 11, 1885. Although built by a Municipal Trust, it was equipped and worked under lease by the Melbourne Tramway & Omnibus Company until July 1, 1916. For the next three years a Municipal Cable Tramways Board carried on the working, and in 1919 the Melbourne & Metropolitan Tramways Board was constituted to cover the street transport of the whole metropolis. It took over the cable tramways, then 45.9 miles of double track, on November 1, 1919, and the 64 miles of electric tramways on February 2, 1920. A Royal Commission, appointed in November, 1910,

had reported in favour of the conversion of the cable lines to an electric system with overhead wires. The Standing Committee on Railways approved the general scheme, but considerable opposition in other quarters prevented the work being taken in hand until 1924. Now that the changeover has been completed, the system comprises 125 route miles of electric tramway and nearly 60 miles of bus route.

A Converted L.M.S.R. Horse Depot

AN interesting example of the methods adopted by the Road Motor Engineer's Department of the L.M.S.R. some little time before the war to meet the needs of its increasing fleet of motor vehicles is provided by one of the company's London depots which formerly provided accommodation for a large number of horses and vans. In 1924 the number of horses stabled there was 170 and, in addition, accommodation was found for nine motor vehicles. At the time of the outbreak of war the number of horses had been reduced to 95 and the motor vehicles increased to 60. In the conversion of the premises, only the ground floor was altered, the existing mangers, boskin's, and other fittings being cleared out. The buildings were lined with fire-resisting asbestos sheets and corrugated steel, but the stone sett floor was left intact. Low-pressure heating apparatus was installed. An adjoining area is used for work shop purposes and the illustrations on page 198 give a general view of the premises and also a view inside the engineer's workshop. The latter is equipped with a lathe and other special plant used for servicing motor vehicles, including a high pressure greasing plant, a welding plant manufactured by the British Oxygen Co. Ltd., a Laycock high-pressure washing plant, a lubricating oil dispenser, and lifting tackle. This section also contains a charging board 60 amp. and a Black & Decker valve refacer. The class of work carried out in this shop is that of inspection and running repairs. Steel roller shutters are employed in place of sliding doors. The original smithy remains for the purpose of horse shoeing only. The horses are stabled in two floors above, access to which is obtained by ramps.

Huddersfield Transport

THE imminent transfer from Huddersfield to Newcastle of Mr. H. C. Godsmark (a portrait and biography of whom appear on page 203) calls to mind the eventful period of eight years at Huddersfield during which he has been General Manager & Engineer of the Corporation Passenger Transport Department and Operating Manager of the L.M.S.R. & Huddersfield Joint Omnibus Committee. He went to Huddersfield from Nottingham where, as Deputy Manager, he had assisted in completing the conversion from trams to trolleybuses of the Nottingham Corporation transport system; and on his arrival at Huddersfield took over the reins at a time when the introduction of trolleybuses on the Almondbury route had been planned. This route was inaugurated on December 4, 1933, under his auspices and was the first trolleybus service in the district. Mr. Godsmark had stated from the beginning that he looked forward to the day when all Huddersfield trams would be replaced by trolleybuses, and he has achieved the completion of this task, as Huddersfield trams finally disappeared from the streets in June, 1940, when the Brighouse route was closed. The Corporation has also operated motorbus services ever since December 20, 1920, and at the outbreak of war some 93 vehicles were maintaining regular service on 23 routes with a total mileage of approximately 160. The growth of the

motorbus undertaking during Mr. Godsmark's term of office is sufficiently indicated by the following figures:—

	1933	1939
No. of passengers	10,246,332	16,008,797
Miles run	2,477,931	3,730,922
Revenue	£111,120	£170,092

The whole of the bus fleet has been modernised and Londoners have recently had an opportunity of seeing something of their excellent condition, as Huddersfield was among the many provincial corporations to contribute towards the emergency bus fleet loaned to London for war needs. Huddersfield motorbus operating costs for 1939 were among the lowest in the country being 8·0 pence a mile.

During the early part of 1929 negotiations were conducted between Huddersfield Corporation and the L.M.S.R., and an agreement was completed on May 16, 1930, whereby the railway company participates in all the Corporation bus services on a 50-50 basis. The L.M.S.R. & Huddersfield Joint Omnibus Committee was established and consists of a panel of 12 members (6 nominated by the Corporation and 6 by the L.M.S.R.), with a working committee of 8 (4 from each side). Mr. Godsmark is Operating Manager of the joint committee, and he tells us that very happy relationship exists between the Corporation representatives and the railway representatives. For example, in order that the Corporation might operate trolleybuses free from competition on one route, the Joint Omnibus Committee sanctioned a pooling arrangement with both the Corporation and a large private operator, which has worked extremely well and has proved a sound financial proposition to all participants. Adjustments were made by the Corporation on other services in order to compensate the Joint Omnibus Committee. The railway company has also proved extremely helpful by giving permission to the Corporation to arrange turning circles and extensions of tramway routes so that the replacing trolleybuses could work more successfully.

Passenger Transport in Moscow

INFORMATION which has been collated recently by the American Embassy in Moscow indicates that the Moscow underground railway system carried approximately 17·1 per cent. of the total passengers conveyed by the various local transport systems in Moscow during the first three months of 1939. This statement is credited to the newspaper *Izvestiya* of May 16, 1940. Moscow is at present served by an underground railway, by tramcars, and by buses and trolleybuses. The underground railway has a universal fare of 30 kopeks; the trams have stage fares ranging from 10 to 35 kopeks (in 5-kopek stages); and the buses and trolleybuses have stage fares ranging from 20 to 70 kopeks (in 10-kopek stages). The fares on the buses and trolleybuses are approximately twice as costly as those on the tramcars, but the distances covered by one stage vary considerably. No system of transfers is available. The Moscow *Pravda* of May 22, 1940, contains an article on the present motor transport situation in Moscow, which points out that, as the city is rebuilt and expands, and more people come to live and work there, the demands on the buses and taxicabs, and lorries hauling goods, are continually increasing. The present number of various kinds of vehicles is large and, taken together with other means of transport, might be adequate if all the cars and lorries were in constant operation. The following table, however, indicates the highly unsatisfactory situation in this respect:—

Kind of vehicle	In service at end of		
	1937	1938	1939
Buses	772	1,002	1,197
Per cent. working	76·6	63·2	50·7
Passenger cars	910	2,441	3,297
Per cent. working	89·4	68·5	48·3
Lorries	1,665	1,762	1,264
Per cent. working	50·4	35·3	32·8

It will be seen that, for all kinds of motor vehicle, as the total grows larger the proportion at work gets smaller. In

addition, the average bus load declined; during the year 1937, for example, a bus conveyed on average 290,600 passengers, in 1938 the figure dropped to 241,500, and in 1939 to 178,300. During the past year the number of vehicles at work continued to be low; in the first quarter 46·6 per cent. of the buses, 25·4 of the taxicabs, and 48·7 of the lorries, were in active service. The chief reason for this state of affairs is the poor maintenance service given to the vehicles. In the first place, as the number of vehicles increased, proportionate garage and repair facilities were not provided, partly because it takes several years to build a garage. As a result, when a bus or taxi breaks down, it stays out of commission for a long time. In 1939, for example, 526 buses, 1,852 taxis, and 1,025 lorries, were idle all the year. In addition, servicing is slow and irregular, and in the same year buses lost 261,600 hours, taxis 921,200 hours, and lorries 282,400 hours, of working time.

Another Railway Converted to a Highway

THE great Pennsylvanian highway that has been constructed along the formation of the partly-completed and abandoned South Pennsylvania Railway was described and illustrated in our issues of September 24, 1937, and September 22, 1939. Another small though interesting example of this practice is the transformation at present in hand of the old Profile Railroad formation, in New Hampshire, into a highway. Originally built as a narrow-gauge line in 1878, the Profile Railroad connected the Boston & Maine Railroad with Profile House near Echo Lake, and was about nine miles in length. Profile House and Flume House were great sources of attraction to the tourist, and the railway did such good business that, in 1915, it was converted to standard gauge. At the same time the old wooden trestle bridge 288 ft. long over the Lafayette Brook was replaced by a steel structure. Sustaining successive losses by the burning down of Flume House in 1915 and Profile House in 1923, without replacement, the railway was closed and the permanent way removed.

To avoid the tortuous and steeply-graded section of road—which had earned notoriety as the Snake Road—that replaced the railway, the New Hampshire State Highway Department acquired the railway formation and in the spring of 1939 began to convert it into a 24-ft. road. The railway formation had to be widened, and the old box stone culverts were replaced by reinforced-concrete pipes or boxes, but, as hilly country is traversed, a great saving in expenditure was effected by the use of the old railway bed as compared with building an entirely new road bed.

Publications Received

Hull Museum Publications.—Under the enthusiastic guidance of Mr. Thomas Sheppard, Director of the Hull Municipal Museums, a series of over 200 Hull Museum publications has been built up, providing a valuable assembly of local historical information. One of the most recent editions is No. 210, from Mr. Sheppard's pen, entitled "Early Tramcars." These publications are not sold in the ordinary way, but are produced principally for exchange with other museums and libraries at home and abroad, and also for students particularly interested in any one of the items concerned. Copies may be obtained at the Municipal Museum.

Dublin Street Guide.—The Dublin United Tramways Co. (1896) Ltd. has recently issued, with the approval of Dublin Corporation, an admirable guide showing where 2,600 Dublin streets are located, and how to reach them by bus or tram from the city centre. This guide, which has 160 pages of the convenient pocket size of 5½ in. × 4 in., contains a large and clear folding map of the Dublin City transport services, based on the Ordnance Survey by permission of the Minister for Finance of Ireland. The guide is well planned and admirably executed. It is available in linen-covered boards price 1s., and in paper covers price 6d.

Road Transport and the War--18

Government Scheme for Ministry of Transport to become a road transport operator—Meat Transport Pool being acquired—The Defence Advisory Committee—London flying squad of buses for emergency

The chief problem of making a war plan for goods transport by road was provided by the large number of independent units of which the industry was composed. Before the war there were nearly half a million vehicles in the hands of 220,000 operators. The "A" and "B" hauliers who constitute the haulage industry numbered some 60,000 and owned between them some 150,000 vehicles. Another important feature was that the Government had informed the Ministry of Transport that petrol would be rationed shortly after the outbreak of war. This rationing was not due, as some have suggested, to any desire on the part of the Ministry to cripple road transport for the benefit of the railways, but resulted from a very elaborate survey by the Committee of Imperial Defence of the demands of the fighting services and civil transport, and our general facilities, including shipping, for importing petrol and oil from abroad in wartime. The problem, therefore, was to see that essential demands for transport were met, and at the same time that the prescribed economy in fuel was attained. The Ministry of Transport has stated that it always regarded the second object as subservient to the first, and in fact it never entirely achieved the economy asked of it.

It was obvious that at the beginning of the war the Ministry could not hope to set up an organisation which would control in detail the work of an industry comprising such large numbers of individual operators. To do so would have invited failure of the machine at the outset. The method adopted was to exercise control through the medium of a rationing scheme. A basic ration was allotted to every vehicle which would enable vehicles of various types and weights each to travel approximately the same distance every week, and provision was made for the issue of supplementary rations to enable work that was essential or useful to the national war effort to be undertaken. This in effect gave the Ministry a fairly effective control over the work carried out by the haulage industry. Supplementary rations were refused in cases where the work for which they were asked was deemed unnecessary or could be done without excessive inconvenience or cost by alternative means of transport. A substantial amount of traffic was thus inevitably diverted from the roads to the railways.

Administration of Fuel Rationing

It will be remembered that, to improve and simplify the administration of rationing, owners of vehicles were invited before the war to form voluntary groups under group organisers, consisting normally of 25 to 100 vehicles. These groups were formed as far as possible on a functional basis. At the same time, the regions into which the country was divided for defence purposes, each of which is under the control of a Regional Transport Commissioner, were divided into districts, and the districts further divided into sub-districts. Each district is under the charge of a Ministry of Transport official, but the sub-districts are under the charge of sub-district managers nominated by the group organisers of the sub-district. The actual issue of ration coupons is made by a Civil Servant attached to the sub-district manager's office, but the sub-district manager, who is a representative of the owners of goods vehicles, primarily decides, subject if necessary to the overriding authority of the District Transport Officer or the Regional Transport Commissioner, or ultimately of the Minister of Transport, upon the amount of supplementary rations to be issued to various applicants. This system, in which the industry itself participates, has worked moderately well until recently, and the Ministry of Transport states that, if the demand for transport generally had not exceeded the supply, it would

probably have gone on working successfully until the end of the war.

The Government's New Road Transport Scheme

An important step designed to increase the efficiency of goods transport for war purposes was announced by the Ministry of Transport on January 23. The broad principles of the new scheme have been formulated in collaboration with the Road Haulage Consultative Committee. The Ministry of Transport will operate the scheme with the assistance of qualified men experienced in the industry who will be invited to join the Ministry for that purpose. Under this scheme the Government will hire vehicles primarily to carry traffic on Government account. The running and maintenance of the vehicles will remain in the hands of the owners, but an official organisation is to be set up, staffed partly by Civil Servants and partly by the experts taken from the industry, to control traffic operation. By these means it is felt that it will be possible to give ready priority to the rapid movement of Government goods and to ensure that full and continuous use is made of the carrying capacity of the vehicles. It is stated that the Government has often found existing methods wasteful, and that this arrangement will enable a more efficient system to be established. Recent events, moreover, have shown it is desirable to be able to switch transport from one place to another to meet sudden demands with a minimum of delay, and the new scheme aims to give effect to priorities, to promote flexibility, and to ensure expedition. The scheme has resulted from the 16 months' experience of the emergency organisation set up for road transport on the outbreak of hostilities and of the operation of the Meat Transport Pool. The emergency organisation will continue and will be superseded only in part by the new scheme. As a first step arrangements will be made by the Ministry of Transport with other Government Departments (such as the Ministries of Food and Supply) for carrying regular blocks of Government traffic. Expansion thereafter will depend upon the measure of its success, though, whether it expands or not, the Ministry of Transport will enter the field of commercial haulage to a certain extent, in order to make full use of the carrying capacity of the hired vehicles. In so doing, the Ministry of Transport states that it does not intend to compete unfairly with the commercial haulier nor to prejudice the post-war position of the goods carrying industry.

The Minister announced on February 17 that he had appointed Mr. C. Barrington and Mr. P. J. R. Tapp to join the Ministry as Chief Road Haulage Officers and as such they will be concerned with running the operational side of the new organisation. (*See biographical notes on page 203.*)

The Minister also announced on the same day that, as a first step in the operation of the new scheme, the Ministry would take over the organisation of the Wholesale Meat & Provisions Transport (Defence) Association, usually known as the Meat Transport Pool.

The Consultative Committee

The Road Haulage Consultative Committee, which was set up by the late Minister of Transport on August 7, 1940, for the purpose of maintaining a continuous contact between the industry and the Ministry, has an official Chairman and Secretary, but otherwise consists of representatives of the industries. The members at present are: Messrs. C. Barrington, J. E. Corrin, W. Edwards, W. J. Elliott, F. F. Fowler, J. S. Nicholl, J. Paterson, R. W. Sewill, G. Smart, J. Strang, P. J. R. Tapp, R. Taylor, Major W. Taylor,

Messrs. A. Todd, B. G. Turner, J. H. Turner, and T. Worsley.

The Defence Advisory Committee

The Road Transport (Defence) Advisory Committee was formed in 1938 for the purpose of reviewing the detailed plans which had been provisionally worked out by the Ministry of Transport for the control of the transport of goods by road in time of war, and to review the position at intervals. Its main task was thus largely discharged before the outbreak of war, although it has been consulted by the Minister from time to time since. The recent setting up of the Road Haulage Consultative Committee, a step in which the Minister was influenced by the representations of the Road Transport (Defence) Advisory Committee, has transferred to the former body, which is directly linked with the various associations of operators, the greater proportion of the questions upon which the Minister may, from time to time, find it desirable to seek advice, and in consequence the necessity for consultation with the Road Transport (Defence) Advisory Committee will be less likely to arise in the future. The members of the Road Transport (Defence) Advisory Committee, however, have agreed to continue to hold themselves at the disposal of the Minister, so that their assistance may still be available to him should any questions arise upon which he desires to consult them.

The London Flying Squad of Buses

The emergency group of 600 buses which the London Passenger Transport Board had available at the beginning of the intensive air raids on London to be placed in service at very short notice at any point required, has subsequently been strengthened considerably by the many double-deck vehicles borrowed from Scotland and the Provinces. These buses are used to fill gaps in Underground railway services, tram and trolleybus services, and main-line railway services when traffic is temporarily disorganised as a result of enemy action. On a typical day in early October, 82 buses were used to help main-line railways, 68 to help the board's railways, and 48 to fill gaps in tram and trolleybus services. In previous weeks the number of buses had been substantially greater, and on Tuesday, September 17, for instance, a total of 357 special buses was in operation. One of the

largest number which has been put into effect by the board on any one day, however, was on the day after the fire-bomb air raid on London during the night of December 29 when the widespread fires which were caused provided an especial problem for London Transport. The improvised traffic arrangements made by officers of the board in order to cope with difficulties presented by closed streets involved the use of no fewer than 750 buses on special services, the majority to provide links with railway stations of the main-line companies and the board.

City of London's Largest Crater Bridged

On February 3, Sir George Wilkinson, the Lord Mayor of London, formally inaugurated a temporary bridge over the largest bomb crater in the City by riding across it in his car. During a night raid a heavy bomb fell directly on a shallow subway, and across the resultant crater this girder bridge was erected by the Royal Engineers in two spans supported by steel piers. It carries a timber roadway 10 ft. 6 in. wide, and two footways.

"Help Your Neighbour" Scheme Continues

It was decided by the Ministry of Transport and the Petroleum Department to continue the provision of extra petrol for organised free lifts in the London area until the end of March. Brief details of the arrangements were given at page 569 of our November 29 issue. The issue of the extra petrol coupons for February and March began on January 27. Application for enrolment must be made in person (not by post or telephone) at the headquarters of the R.A.C. or the A.A.

Horse Feed Rationing

Since February 1 supplies of feeding stuffs (including oats, beans, and bran) for urban horses have been obtainable only by means of official ration cards or coupons issued by the Ministry of Food. The scheme applies to all urban horses including mules, asses, jennets, and donkeys. It does not apply to horses already registered with County War Agricultural Executive Committees or Agricultural Departments, horses and ponies employed in the mining industry, army horses and mules, and horses in racing and hunt stables.

Road Vehicle Registrations

The Ministry of Transport returns of the number of mechanically-propelled road vehicles registered for the first time during the last four months of 1940 showed the following aggregate figures: September, 4,376; October, 4,587; November, 3,260; December, 2,293. Details for the chief categories are given below:—

	Sept.	Oct.	Nov.	Dec.
Cars taxed on h.p.	245	300	268	176
Cycles	1,874	1,662	917	465
Hackneys	75	100	115	100
Agricultural vehicles (5s. class) ...	1,505	1,431	1,133	834
General goods vehicles	324	324	430	389

Motor Transport Spare Parts

Arrangements are being made under which the Ministry of Supply is taking over responsibility for the supply of spare parts for essential civil road transport. At present the Ministry provides spare parts to the Services. This scheme is to be extended and the Ministry will co-ordinate Service and civil requirements. The armament programme has reduced the production of vehicle spares and the purpose of the new arrangement is to keep as many civilian vehicles on the road as possible and to allocate the limited amount of material and productive capacity available for the most essential purposes.

Vehicle Camouflage

It will be recalled that on August 10 last the Minister of Home Security made an Order prohibiting the use on any highway by an unauthorised person of any vehicle camouflaged like an Army vehicle. In some cases buses and coaches which have been on hire to the military authorities have been returned to their owners bearing military camouflage, and it has not been possible to use them for ordinary purposes until the camouflage has been removed. In view

The Ministry of Labour & National Service and the Ministry of Transport have issued an appeal to housewives to help the war effort by avoiding travel late in the day. The left-hand newspaper announcement is one issued by these Ministries. On the right hand is a similar press advertisement of a large railway-associated bus company



Left to right: (1) A stone in Gloucestershire showing Hyde Park Corner as one of the London zero points; (2) Mile post in East Lothian that might have been designed for war purposes. The letters indicate Haddington, Dunbar, and Edinburgh; (3) Dorset post lettered for easy reading on approach; (4) A Cumberland stone shaped like a tombstone; (5) Combination of pump and milestone at Ampthill, Bedfordshire, erected by the Earl of Upper Ossory in 1785

Some unusual British milestones, photographed in peacetime. Place indications have been removed from the highways as part of the precautions against invasion

of cases of hardship which have arisen, the Ministry of Transport has now made arrangements with the War Office for temporary certificates of exemption from the camouflage regulations to be issued in respect of vehicles returned from military hire, so that the owners can use them for ordinary purposes pending a repaint.

Transport During Alerts

It was decided in December that Leeds City Transport services would continue to run during air raid alerts until there were indications of an air attack in the immediate vicinity. Instructions which have been issued to the men state that, when imminent danger causes a stoppage, trams must be parked so as to avoid obstructing the free passage of ambulances, fire engines, and so forth, and that every possible use must be made of reserved tracks. Buses should be run into side streets and left with ample clearance between vehicles. Glasgow transport workers have now withdrawn their qualification that they should not be required to continue services during air raid alerts after 8 o'clock in the evening.

In various parts of the country questions of compensation for employees and safety precautions have been raised during discussions on the operation of bus services during air raid alerts after blackout. Among the places affected are Aberdeen, Barrow-in-Furness, Bournemouth, Darlington, and Dundee. At Aberdeen one of the principal points raised in negotiation was that of compensation in the event of fatal injury. The transport committee agreed to recommend payment on the same basis as in the event of injury, that is, up to 26 weeks' wages; the corporation had already agreed to give the men up to 26 weeks' full pay in the event of injury. Members of Bournemouth Town Council voted against a proposal that injured busmen should be compensated by having their wages made up to the normal level for six months.

Road Barriers and Signposts in Eire

A few days before Christmas semi-permanent barriers on many roads throughout Eire were erected by the military authorities. Road drivers have been warned that great care should be exercised, as the barriers may, in many cases, be encountered around corners or bends. The armed parties guarding the barriers have orders to fire on persons who disregard an order to halt. Sufficient lights for warning drivers are displayed at night in the vicinity of the barriers.

A ban on the display of signposts came into force in Eire on February 1. This is the effect of an emergency Government Order issued on January 8 which makes it an offence to display anywhere outside urban areas a sign which furnishes indication, name, situation, direction, or distance to any place. The Order also prohibits the display within urban areas of signs

indicating direction or distance to any place. A sign is deemed "displayed" if it can be seen from a highway, train, or low-flying aircraft.

Disposal of Motors in Ulster Restricted

The disposal for use outside Ulster of goods and passenger motor vehicles registered there has been made illegal, except under licence, by an Order issued by the Northern Ireland Ministry of Home Affairs, and announced on January 13.

Troop Movements in the U.S.A.

During the first week in January commercial motor carriers in the U.S.A. conducted the first complete road transport movement of troops as a combat unit in the history of the U.S.A. This was officially announced by the U.S.A. War Department on January 10. Preparations for the transfer of troops and their luggage and fighting equipment were made by the Quartermaster Corps in co-operation with the American Trucking Association and the Public Roads Administration. The troop movement was conducted in Arkansas, with the 153rd Infantry, Arkansas National Guard, being transported by road from 15 points in the State to Camp Joseph T. Robinson, which is just outside Little Rock. The movement involved approximately 1,900 officers and men, personal luggage, and large quantities of equipment and weapons. The 15 convoys were composed of 56 lorries, 21 buses, and many army vehicles. The longest haul was 221 miles from Blytheville, Ark., and the shortest haul six miles from North Little Rock. The movement was presented as a tactical problem to bus and lorry operators to determine the part that motor transport of combat units by commercial carriers might play in national defence. Detailed studies of the movement and the manner in which it was conducted are being made by the Quartermaster General's Office.

New Strategic Roads

A new road from Oslo to Bergen was opened for traffic on December 6, according to the Official German News Agency. It is said to be the first road running from east to west Norway accessible to traffic all the year round.

According to the German radio, a circular road is being built round Paris on the pattern of the German *Reichsautobahnen*.

The German authorities have announced that they intend to build new *Autobahnen* connecting the Reich with the territories now under German occupation. These roads will connect Berlin with Königsberg via Chojnice and Tczew (Polish Pomerania), and Marienburg (East Prussia); another will connect Berlin with Warsaw via Bydgoszcz and Torun (Polish Pomerania); and a third will be from Danzig via Marienburg and Grudziadz to Lodz. On the other side of the Russo-German demarcation line in Poland the Russians are also building strategic roads.

A Converted L.M.S.R. Horse Depot

(See page 193)



View in the yard of a London motor garage and workshop of the L.M.S.R. ; this was formerly a horse depot



Interior view of a portion of the road motor workshop in the above L.M.S.R. depot

Automatic Level Crossing Barriers in Canada

Replacement of manual control of barriers at a C.P.R. crossing in Montreal

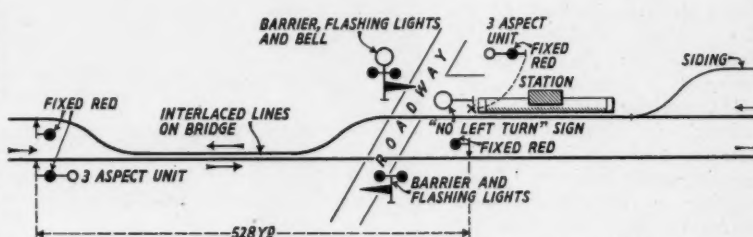
SOME particulars of the working of level crossing barriers on the Canadian Pacific Railway in Bordeaux, a suburb of Montreal, which is typical of much work of this kind carried out on the North American Continent of recent years, where level crossings are often found in the middle of busy cities, are given in our American contemporary *Railway Signaling*, in its issue for October, 1940. Lifting barriers are the usually-accepted method of providing a positive bar to the passage of road vehicles at a crossing, gates of the British type, closing across road and railway alternately, being unknown. In many cases, however, some form of warning—such as flashing lights, or bells—only is used. On a plain double or single line, where trains run straight through, the working of such barriers presents no particular difficulties, but local circumstances, such as the proximity of stations or sidings, may call for special arrangements to prevent road traffic being unnecessarily or unduly interfered with.

One such crossing, illustrated on the accompanying diagram, is situated on a section of line until recently equipped with automatic signals for the protection of train movements over a length of interlaced track about 350 ft. away. The C.T.C. system of control has recently been added to the signals, the controlling point being a station five miles away, and the mechanism of the barriers has been modernised. They formerly consisted of pneumatically-operated arms, extending the full width of the roadway, controlled by a gateman, with bell to give warning before closing. In winter, however, the working was often interfered with by moisture freezing in the air pipes. Electric motor operation has now been substituted and the barriers made half length, so preventing access to the crossing for approaching traffic, correctly driven, but allowing a vehicle to get clear after the barriers descend. There is now no gateman, but flashing lights, with gongs, are provided; the signboards are in both English and French, as required in the Province of Quebec.

At the crossing a road parallel with the railway runs into the one which goes over it, and a special "No left turn" sign—now frequently used in such localities—warns vehicles when it is useless to turn in that direction with the object of

crossing the line. The gongs sound only for 5 sec. before and during the time the barriers descend, but the lights remain in action until the road is again open.

When the railway signals—then semaphores—were automatic, there was no means of giving preference to a particular train over the interlaced track and, to avoid long approach sections, which would have encroached on areas where shunting complicated the traffic movements, the distant indications for the protecting signals were fixed at caution, an undesirable restriction on train movements. The introduction of C.T.C. (remote control) working has remedied this, and the new signals are colour lights, providing full standard home and distant



Level crossing barrier layout, Bordeaux, Canadian Pacific Railway

running indications. The dispatcher at the C.T.C. machine is able to control the train movements over the interlaced section to the best advantage, and can now also allow a train to run up to a station platform in rear of the crossing without stopping vehicular traffic until the departure time arrives.

In the case of freight trains making shunting movements within station limits, the guard telephones to the dispatcher when he requires the signal to be cleared for him to proceed. Should a train have to stop and shunt although the signal has been cleared for it, the guard can operate a cancelling button at the crossing, restoring the signal to danger and freeing the road for vehicular traffic, a second button being used to bring the crossing protection into action again at the right moment. Such cancelling is only effective for one train and will not interfere with the correct working of the crossing barriers for any other one.

Right: A group of Thornycroft Nippy class tilt vans operated by the Southern Railway. The bodywork was supplied by the Cunard Commercial Bodybuilding Company of Wembley to railway specification



Overseas Notes

Road Conveyance of Livestock in South Africa

Owing to the extensive fencing of farms in South Africa, difficulty has for some time been experienced by farmers in trekking slaughter sheep by road to the railheads. Farmers are, furthermore, gradually learning that the higher prices obtained on the markets for slaughter stock transported by road motor vehicles, as against the prices realised for stock trekked to railheads, more than compensate them for the transport costs involved. The demand for transport facilities for this traffic is increasing, therefore, and in order to meet the position experiments are being conducted by the South African Railways & Harbours Administration with a view to determining the most suitable type of motor vehicle and trailer to be used for the purpose. A figure that is probably

luxurious passenger accommodations, including 74 passenger staterooms. The carrying capacity will be 34 loaded freight cars, 50 motorcars, and 376 passengers. Motorcars will be carried on the upper deck, and will be loaded by ramp.

Two-mile Bridge over Potomac River

On the new by-pass avoiding Washington, a great highway bridge over the Potomac river, connecting Maryland and Virginia, some 50 miles below Washington, was opened on December 14 last. It is 10,050 ft. or nearly two miles long, and consists of an 800-ft. cantilever span over the main channel and Wichert girders and trusses forming the approach spans. The 800-ft. cantilever span has 367-ft. anchor spans and the bridge carries a 24-ft. roadway with

Right: An experimental A.E.C. 28-seat single decker in the service of the Buenos Aires Transport Corporation. All A.E.C. vehicles are, of course, marketed in South America under the trade mark Aco, and there is ample evidence of the steadily rising popularity of such vehicles in Argentina both for passenger and for goods service. Another view of this Buenos Aires bus (No. 2500) was reproduced at page 94 of our January 24 issue



a record for the number of livestock conveyed by road in one day in South Africa was recently reached at Graaff Reinet, when 1,114 sheep were conveyed by the railway administration's road motors in connection with a stock sale.

Trolleybuses in Spain

The full text has just been received of a new law, published in Madrid on October 5, 1940, regulating the concession of new transport lines operated with trolleybuses. The preamble to the law states that there are some 1,300 km. (808 miles) of tramways in Spain, but most of these lines are in urgent need of heavy repairs which the concessionaires are not in a position to carry out. This, and the recent advances in the use of the trolleybus in other countries, make it advisable to encourage and regulate the concession of lines of trolleybuses throughout Spain, whether in substitution of existing tramways or as new systems. The recent introduction of trolleybuses in Bilbao, the first of this type of vehicle to be used in Spain, was reported in THE RAILWAY GAZETTE of November 29, 1940, at page 563. It is interesting to note that the new Law retains the accepted word trolleybus in its Spanish form of *trolebus*.

Railway Motorcar Ferry for Lake Michigan

The new flagship of the Pere Marquette Railway Company's Lake Michigan fleet, the streamlined all-steel *City of Midland*, is stated to be the largest, most modern, and one of the fastest motorcar ferries in the world. It was launched on September 18 at the yards of the Manitowoc Shipbuilding Company at Manitowoc, Wisconsin, and is to enter service in the early part of the present year, plying on one of the busiest of water traffic lanes, namely, the run between Manitowoc and Ludington, Michigan, transporting passengers, freight, and highway vehicles across Lake Michigan. The *City of Midland* has an overall length of 406 ft.; length between perpendiculars 388 ft.; beam 58 ft.; and moulded depth 23½ ft. Her gross tonnage will be 6,000 and her displacement 8,200 tons. The cost of the vessel is \$2,000,000. The service speed is to be 18 m.p.h. The vessel will have

an 18-in. footway on each side of it. Construction works, of which we hope to give details later, included caissons sunk to rest on steel piles driven to rock for the main span, and piers 96 ft. high. For the approach spans piling 194 ft. long was driven by the largest floating pile-driver in the world. The cantilever anchor arms were erected by the balanced cantilever method, using a jacking leg at each main pier. The Wichert spans were erected on falsework spans up to 375 ft. in length, floated to site, and supported there on the edges of the pier caps. The structure is being worked as a toll bridge by the State of Maryland.

Union Bus Terminal Proposed for New York

Plans are under consideration for the construction of a bus terminal station at a cost of some \$4,000,000 for use by all non-local buses entering Manhattan Island, New York City. It is proposed that this station should be built and operated by a new company entitled the Times Square Terminal Inc., which is headed by Mr. Harold W. McGraw, of the well-known publishing firm—the McGraw-Hill Publishing Co. Inc.—which issues an important group of trade periodicals including the *Transit Journal* and *Bus Transportation*. Some months ago a New York City regulation barred all non-local buses from entering a central area as from January 1, 1941, but the date has been advanced as the bus station negotiations are in progress. The new building is intended to be erected on a site of 58,000 sq. ft. bounded by 8th and 9th Avenues, and 41st and 42nd Streets. The building would have 300,000 sq. ft. of floor space. The ground floor would be devoted entirely to concourse and waiting-room facilities; the first underground level to 17 bus roads with loading and unloading platforms; and the second underground level used for storage. It is estimated that 600 buses an hour could be accommodated. Access to the station by New Jersey buses would be direct from the adjacent Lincoln tunnel. Other bus services would use a new 500-ft. approach tunnel which would be built by the City authorities at an estimated cost of about \$600,000; reimbursement would be by toll.

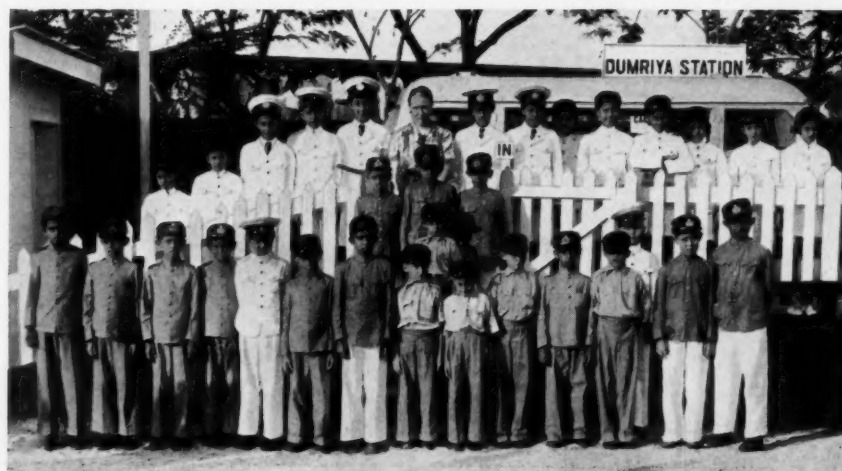


Ceylon Railway Carnival for War Funds

(For description see page 207)

Left: View of the carnival grounds, representing an old English village with "the church" on the right, and one of the features of the amusement park on the left

Right: A street of stalls in "the village," with the doll stall or "dolls' at home" in the foreground, and (on the left) Mrs. Hills, wife of the General Manager, in charge



Left: "The staff" at "a station" on the miniature railway in the carnival, with "the railcar" in the background. "The staff" consists of children of railway employees, who are solely responsible for working the railway

British Railways and the War—58



Above: Serving Servicemen with ninepenny packet meals at a Y.M.C.A. canteen at a London station. These packet meals are for the benefit of those travelling on trains without meal facilities. They are prepared by the Y.M.C.A. and the Salvation Army. A typical meal includes ham sandwiches, sausage roll, cake, and a bar of chocolate



Two views showing the part of the former St. Pancras hotel of the L.M.S.R. which has been converted into a canteen and rest room for Servicemen, and is run by the Salvation Army. Above: A game of table tennis in progress. Right: The quick-service counter and café in the former hotel dining room

RAILWAY NEWS SECTION

PERSONAL

H.M. the King held an Investiture at Buckingham Palace on February 18 when, among other recipients of Honours, the Accolade was conferred on Mr. Ernest J. Lemon, O.B.E., a Vice-President of the London Midland & Scottish Railway, and upon Lt.-Colonel A. H. L. Mount, C.B., C.B.E., Chief Inspecting Officer (Railways), Ministry of Transport.

The Minister of Transport has appointed Mr. Frank Pick to investigate and report upon the carriage of traffic on canals and inland waterways. Mr. Pick was Vice-Chairman of the London Passenger Transport Board until April of last year. In June he was engaged on special investigations for the Minister of Transport, and one of his tasks was to visit ports and report on the organisation set up to secure speedy discharge of clearance of goods. In August he was released from that work to become Director-General of the Ministry of Information; he resigned four months later.

Mr. E. C. Lysaght and Colonel H. B. Sankey have been elected to the board of Guest, Keen & Nettlefolds, Limited.

Mr. John P. Stephenson Clarke and Mr. Griffith Llewellyn have been elected Directors of the Powell Duffryn Associated Collieries Limited. Mr. H. H. Merrett has been elected a Director of the Powell Duffryn Steam Coal Co. Ltd. The directors of the Welsh Associated Collieries Limited, have elected Mr. Griffith Llewellyn to the board and have appointed Mr. J. H. Jolly Chairman of the company. Mr. Edmund L. Hann has joined the board of Guéret Llewellyn & Merrett Limited.

Mr. Alexander Galloway Erskine-Hill, K.C., M.P., has been appointed a Director of the London & North Eastern Railway Company to fill the vacancy caused by the death of Lord Abertay, which we recorded at page 624 of our December 13 issue.

The U.S.A. Army authorities are desirous of improving their transport delivery time so as to reduce their "static inventories," and have set up an advisory board on transportation questions. There is one railway representative, Mr. R. C. Morse, Vice President, Eastern Region, Pennsylvania Railroad. There are, however, two steamship men, one warehouse man, an air transport man, and two road transport men. Mr. John L. Rogers, a member of the Interstate Commerce Commission, and two Army officers complete the board.

Mr. H. C. Godsmark, General Manager of Huddersfield Corporation Passenger Transport Department and Operating Manager of the L.M.S.R. & Huddersfield Joint Omnibus Committee, is succeeding Mr. T. P. Easton, on the retirement of the latter in March, as General Manager of the Newcastle Transport & Electricity undertaking, as briefly recorded at



[Lafayette]

Mr. H. C. Godsmark

[London]

General Manager & Engineer, Huddersfield Corporation Transport, and Operating Manager, L.M.S.R. & Huddersfield Joint Omnibus Committee, who has been appointed General Manager, Newcastle Transport & Electricity

page 98 of our January 24 issue. Mr. Godsmark received his early training at Loughborough College and with the Brush Electrical Engineering Co. Ltd., Loughborough. He then joined the Forces at the outbreak of the last war and served until 1918 with the Royal Engineers at Salonica, chiefly on the headquarters staff of the Salonica and Constantinople railway. After demobilisation he joined Cammell Laird & Co. Ltd., Nottingham. He then served for five years as technical assistant with the London County Council, and four-and-a-half years as Chief Technical Assistant, Manchester Corporation Transport Department. From here he went to Nottingham where he was Deputy General Manager to the Corporation Passenger Transport Department, and assisted in completing the conversion from trams to trolleybuses of the municipal system. In May, 1933, Mr. Godsmark was appointed General Manager & Engineer of the Huddersfield Corporation Passenger Transport Department, and also Operating Manager of the L.M.S.R. & Huddersfield Joint Omnibus Committee. During his eight years of office he was responsible for the entire conversion of the Huddersfield tram-

way system to trolleybus operation, and also for the many difficult and complicated negotiations with other operators which had to be completed before the final conversion could be effected. Both at Nottingham and at Huddersfield Mr. Godsmark has always taken a keen interest in the social welfare of the employees, and he is President of the Huddersfield Tramwaymen's Social Club. Since the outbreak of the present war, he has taken a leading part in troop entertainment work and as a member of the Huddersfield Entertainments Committee was responsible for the entertainment of troops at isolated outposts, including the organisation of transport and fitting-out of the travelling theatre. Mr. Godsmark is a member of the Institute of Transport and an Associate Member of the Institution of Automobile Engineers.

The Minister of Transport has appointed Mr. C. Barrington and Mr. P. J. R. Tapp to join the Ministry as Chief Road Haulage Officers. In this connection they will be concerned with running the operational side of the newly-formed Government Road Haulage Scheme, which we outlined in our issue of January 31, and of which further details are given at page this week. It is announced that as a first step in the working of this scheme the Ministry will take over the organisation of the Wholesale Meat & Provisions Transport (Defence) Association—more generally known as the Meat Transport Pool.

Mr. Percy J. R. Tapp was born in 1886 and began his business career in 1906. He joined the army in 1915 and served for four years in France in the 19th Division, was mentioned twice in despatches and gained the Military Cross. When he returned to civilian life he formed the Market Transport Company which undertook the carriage of meat and provisions. In 1929 he formed County Commercial Cars Limited, a company to manufacture special type axles and equipment. In 1938 Mr. Tapp, in conjunction with Mr. H. F. Minter and Mr. G. W. Quick Smith, formulated a scheme for a meat and provisions transport pool which included a new method of period hire payment to operators. This scheme was adopted by the Ministry of Food and has operated since the outbreak of war under the title of the Wholesale Meat & Provisions Transport (Defence) Association. Mr. Tapp is Chairman of this association.

Mr. Claud Barrington was born in 1893 at Portishead, Somerset, and was educated at Colston School, Stapleton. He was trained as a mechanical engineer with Stothert & Pitt Limited, Bath, and gained experience in all the

workshops, the drawing office, and estimating department. Mr. Barrington was commissioned to the Gloucestershire Regiment from the O.T.C. of Bristol University in 1914 and served in France until he was wounded in 1916. He transferred to the Royal Engineers and became Chief Inspector for Scotland for Inland Waterways & Docks (R.E.). Later he was seconded to the Works & Buildings Department of the Air Ministry and became Officer in Charge of the Heavy Plant & Vehicle Repair & Stores Depot, West Drayton. When he returned to civil life, Mr. Barrington became Founder-Director of Carey, Davis & Thomas Limited in 1923. He also became Director of various other transport concerns, and in 1936 was appointed Joint Managing Director, with the late Major E. C. Thomas, of Transport Services Limited, a public company with a capital of £1,000,000, and the holding company of a number of goods road transport undertakings. Mr. Barrington was also a Director of all subsidiary companies and Chairman of a large number. He is a Member of the Institution of Mechanical Engineers, the Institution of Automobile Engineers, the Institute of Transport, and of the Road Haulage Consultative Committee.

COLONIAL APPOINTMENTS

Mr. M. A. Crane, Research Officer, Nigerian Railway, to be Senior Locomotive Superintendent, Gold Coast Government Railway.

Mr. T. E. Jansz, Assistant Divisional Transportation Superintendent, to be Divisional Transportation Superintendent, Ceylon Government Railway.

Mr. H. L. Latreille, Superintendent of Stores, Railways, to be Chief Accountant, Jamaica Government Railway.

Mr. W. G. Woods, Locomotive Foreman, Tanganyika Government Railways, to be Works Manager, Trinidad Government Railways.

Sir Robert Abbott Hadfield, Bart., F.R.S., whose death we recorded in our issue of October 4, has left estate valued at £420,690.

We regret to record the death on January 26 at Bharatpur, Rajputana, India, of Mr. W. D. McD. Cruickshank, O.B.E., A.M.Inst.C.E., Chief Engineer, Bharatpur State, and formerly Superintendent of Works of one of the largest circles in the great 1926-31 programme of new railway construction works undertaken by the North Western Railway of India. *Inter alia* he was responsible for the supervision of the building of the big bridge over the Indus at Kalabagh, and Part I of the illustrated article upon it, published in our constituent *The Railway Engineer* in March, 1934, was contributed by him. He also supervised the construction of several other bridges over the great Punjab rivers. Essentially a thoroughly practical engineer, he combined practical efficiency and economy with sound theoretical knowledge, and there can

have been few engineers in India more capable of supervising Indian labour and contractors. Mr. Cruickshank began his career on the construction of the Quetta-Nashki Railway in Baluchistan, now a part of the long tentacle of the North Western system stretching out to the confines of Iran. Subsequently he left the railway service for other Government employment in the Indian States in Rajputana, but returned to the N.W.R. when the wide expansion of that system was planned prior to the depression. The death of this very popular officer will be lamented by a wide circle of friends both on the N.W.R. and in Rajputana, as well as those who have retired in this country.

L.M.S.R. APPOINTMENTS

Mr. A. G. Banks, Assistant to District Engineer, Bradford, to be District Engineer, Bradford, *vice* Mr. J. Alexander, retired.

Mr. J. Fallows, Assistant District Goods Manager, Warrington, to be Assistant District Goods & Passenger Manager, Chester, *vice* Mr. A. J. Moore, retiring.

Mr. H. Eccles, Commercial Assistant to District Goods Manager, Warrington, to be Assistant District Goods Manager, Warrington.

Mr. H. Oakley, Assistant Stationmaster, Preston, to be Stationmaster, Lancaster (Castle), *vice* Mr. L. M. Sayers, promoted.

Mr. G. W. Naylor, Assistant Yardmaster, Aintree, to be Yardmaster, Healey Mills & Horbury Junction, *vice* Mr. G. Lumby, promoted.

We regret to record the death, on February 8, at the age of 81, of Mr. Robert Walton Moore, Counsellor of the State Department, U.S.A. Mr. Moore was a well-known Washington barrister and authority on railway administration in the United States. From 1907 he was associated with transportation cases being heard before the Interstate Commerce Commission, and in 1910 was recognised as the leading counsel on these matters and railway law. In 1917 on the entry of the U.S.A. into the last war he was appointed Assistant General Counsel for the administration set up by Government when it took control of the railways. Later he became Administrator, and continued in this capacity until the railways were returned to private control. Mr. Moore was appointed Assistant Secretary of State under Mr. Cordell Hull in 1933 and in 1937 became Counsellor or Legal Adviser of the State Department.

Mr. Arthur B. Twyman, General Auditor, Wabash Railroad, has been appointed Comptroller.

Mr. James W. Newell, Vice-President (Accounts), Wabash Railroad, retired on January 1.

Mr. Arthur K. Atkinson, Treasurer for the Receivers, Wabash Railroad, has been appointed to the newly-created

position of Chief Financial & Accounting Officer.

Mr. William Bartley, Assistant Superintendent of Transportation, New York, Chicago & St. Louis Railroad, has been appointed Superintendent of Transportation, in succession to Mr. W. A. Collie, whose death we recorded on February 14.

Mr. K. A. Newman, B.Sc., has been appointed Managing Director of Federal Aircraft Limited. Mr. Newman, who has been a Director of the company for some time, has been Chief Mechanical Engineer of the Canadian Pacific Railway for a number of years, and gives his time voluntarily to the Government-owned Federal organisation.

We regret to record the death on January 2 of Mr. George Stokes Fanning, Chief Engineer, Erie Railroad, and President of the American Railway Engineering Association. Mr. Fanning, who was born in 1885, began his career with the Michigan Central Railroad in 1906. In 1910 he joined the Algoma Central & Hudson Bay Railway as a Resident Engineer, and in 1913 went in a similar capacity to the Erie Railroad. After various advancements, Mr. Fanning became Chief Engineer in 1929.

Mr. O. E. Hager, Assistant Bridge Engineer, New York, Chicago & St. Louis Railroad (Nickel Plate), has been appointed Engineer, Bridges & Structures, Pere Marquette Railway, Detroit, in succession to Mr. Charles S. Sheldon, who retired on December 15.

Mr. A. H. Wright, Assistant General Manager, Line East, New York Central System, has been appointed Vice-President & General Manager in charge of Operation, Buffalo and East, in succession to Mr. D. B. Fleming, who retired on December 31 after 47 years of service.

At the request of the President of the Board of Trade, Sir Charles Innes, K.C.S.I., C.I.E., is examining the problems of industrial reconstruction after the war. Sir Charles Innes was formerly Commerce Member of the Governor-General's Council, India, and subsequently Governor of Burma.

Mr. J. M. Eddy, C.B.E., has been appointed by the British Red Cross & St. John War Organisation to visit Lisbon to investigate matters concerning parcels for British prisoners of war. Mr. Eddy is Chairman of the Buenos Ayres Great Southern and the Buenos Ayres Western Railways and a Director of the Buenos Ayres & Pacific Railway and of the Bank of London & South America. The appointment of a man of such wide interests as Mr. Eddy on this mission to Lisbon exemplifies the importance which the British Red Cross & St. John War Organisation and the British people attach to expediting the delivery of these parcels.

TRANSPORT SERVICES AND THE WAR—78

Civilian casualties in air raids—G.W.R. fire-fighting trains—Women in railway service—Remarkable repair work—Duisburg mechanised marshalling yard—Railway reconstruction in Belgium—Italian frontier traffic—Ceylon railway carnival for war funds

The Ministry of Home Security has announced that during January 1,502 civilians were killed by air raids and 2,012 were injured and detained in hospital. The totals were divided as follow:—

	Men	Women	Children under 16
Killed...	720	567	189
Detained in hospital...	1,172	682	158

The remaining 26 persons killed are not classified.

Train Meals for Evacuees

The first L.M.S.R. special evacuation train to provide refreshment facilities was run from London to the North on February 11; a typical meal, which costs only one shilling, comprises soup, hot pie, rice pudding, and a cup of tea.

More Buffet Cars for Troop Trains

Arrangements have been made between the Salvation Army and the L.M.S.R. for a number of buffet cars to be put into service for the convenience of members of the Forces making long journeys by special trains in Scotland. The buffet cars are manned by Salvation Army staff, and both ordinary table accommodation and quick-service-counter facilities are available. These facilities are in addition to those already being provided by N.A.A.F.I. in conjunction with the railway.

G.W.R. Fire-Fighting Trains

One of the three fire-fighting trains put into service by the Great Western Railway was inspected at Paddington station on February 17 by Mr. William Mabane, M.P., Parliamentary Secretary to the Ministry of Home Security. The trains are available night and day, and an engine waits with steam up ready to take them to any part of the system. They are painted scarlet, and comprise a passenger coach for the eight firemen and a covered truck containing two trailer pumps and other equipment. Mr. Mabane complimented the crew of one train on the speed with which they unloaded a pump by means of a pulley. The trains are stationed at three strategic points, and arrangements have been made to ensure that in an emergency they will have an uninterrupted run. Rations for the firemen and heating apparatus are provided. Mr. Mabane congratulated railway officials on the design of the trains and equipment.

Women Car Cleaners for Underground

London Transport is to engage 200 women car cleaners to take the places at Underground railway depots of men called up for war service. Some women are already at work, but so far they have been employed on cleaning the insides of cars only. Women are also replacing male labourers; there are four at the Ealing Common depot. More than 12,600 London Transport men are now serving with H.M. Forces.

Public Enquiries at Paddington

A million and a quarter telephone enquiries a year were handled by the public enquiries staff at Paddington station, G.W.R., last year—over three-quarters of a million more than during 1938, the last complete peace year. Most of the staff are girls who are doing a man's job so that male clerks can be released to serve in the Forces or fill front-line civilian posts. Many of the girls have left school only recently, and before qualifying for a position which demands speed, courtesy, and tact they have to undergo an intensive eight weeks' course of training. This includes working a series of examination papers on the lines of the stiffest newspaper "Do You Know" corner. Having passed these tests they are able to

give a quick answer to any of the questions likely to be asked them at any minute during the twenty-four hours that the office is open. Above all it is impressed upon these girls that, as their department is often the first with which a prospective passenger comes in contact, a misleading or curt reply to his enquiry may prejudice him for ever against the company.

Ramsgate Tunnel Shelters

More than 1,750 out of Ramsgate's present population of 14,000 sleep regularly in the deep tunnel shelters which were described and illustrated in our issues of October 4, 1940 (page 365), and January 31, 1941 (page 122).

L.M.S.R. Salvage Operations in 1940

During 1940, employees of the L.M.S.R. salvaged 9,940 tons of waste material. Included in this total was scrap metal (4,831 tons); paper (3,129 tons); timber (1,135 tons); and rope (534 tons). All this material has been picked up at stations, carriage sheds, engine depots, refreshment rooms, and other similar places, and is in addition to scrap recovered from the company's workshops.

Notable Repair Work

We have already outlined in editorial articles the work accomplished by railway engineers in restoring communications after air raid damage. The following examples of outstanding work recently carried out are worth recording.

As a result of a heavy bomb falling nearby, the crown of the arch of a shallow tunnel collapsed, permitting earth to penetrate to the line. Soil continued to fall through until a hole showed at ground level above. A mechanical excavator was taken to the site, and 2,000 cu. yd. of earth removed above the tunnel. A new arch was built, the earth removed from inside the tunnel, and the line reopened for traffic.

A high explosive bomb penetrated the booking hall of a busy station situated in a cutting, and exploded on the track over the subway between one platform and the other. The blast in the confined space between the track and the booking hall above was very severe. Rails, timbers, and girders over the subway were damaged, and portions of the platforms destroyed, while all the brick and tile construction on the platforms was demolished, together with the various kiosks. Many cables under the platform coping were also put out of action. Many tons of debris had to be removed by ballast train. So quickly was restoration accomplished that the line was ready for service again with temporary signalling less than eight hours after the damage occurred.

A heavy bomb fell through a brick viaduct carrying two down electrified tracks, and penetrated into the ground below where it exploded, demolishing part of the viaduct. The two up tracks on an adjoining viaduct remained intact, and to enable up and down services to be operated, a large cable diversion and the installation of temporary crossovers and signalling were carried out. Meanwhile, the remains of the arches were demolished with the aid of a locomotive and wire cables. A special train equipped with a large electric air compressor was brought to the site, and the demolition of the brickwork put in hand by ten heavy pneumatic hammers. The whole of the debris was broken up, and removed by lorry. The worst of the crater was dug out, and the remaining weak ground covered with a raft composed of concrete reinforced with bull-head rail. A temporary trestle bridge of two spans was then constructed on concrete and sleeper grillages. Incorporated in the design of this trestle bridge was a thrust member to take the end thrust of the existing viaduct arches. Rolled steel joists, 24 in. x 7½ in., two per rail, with cross sleepers resting upon them, were provided to

carry the tracks. Normal service was restored a few days after the bomb fell, but up and down traffic was resumed on the undamaged viaduct adjoining in less than 24 hours.

A bomb penetrated through the centre of a busy roadway, and exploded over a tunnel, damaging it. Shoring up was immediately undertaken, after a ballast train conveying the necessary equipment had been run through to the site of the damage. The adjoining tunnel for the other direction of traffic was slightly damaged, but within ten hours, by which time strutting had been completed, service was resumed in it. The damaged tunnel was repaired and was soon ready for service again.

Duisburg Marshalling Yard

For some time past listeners to the news bulletins broadcast by the B.B.C. Home Service have become familiar with the names of places in the Ruhr industrial area of Germany, and a target which appears to have received a good deal of attention from the R.A.F. bombers is the important group of towns at the confluence of the Ruhr and Rhine, namely Oberhausen, Duisburg, and Ruhrort, which are, in fact, three towns in one. Not only is the port here the largest inland port in Europe, but the railway network is probably as dense as may be found anywhere, and the big mechanised marshalling yard at Duisburg (Hochfeld Süd) is a conspicuous landmark from the air, as well as being an important traffic bottleneck. In *THE RAILWAY GAZETTE* of September 6, 1940 (page 259), we gave an illustrated description of the mechanised marshalling yard at Hamm, which forms the bottleneck at the eastern end of the Ruhr industrial area, as the Duisburg yard forms the western bottleneck. As we then recorded, the Hamm yard, after having been entirely remodelled and mechanised, was put into operation in 1925. The mechanised Duisburg yard was inaugurated in March, 1928. Both are worked on the same principle of controlled braking, but Hamm, being on a comparatively flat site, is worked on the hump system, whereas Duisburg yard, lying on sloping ground, is worked by gravity.

As will be seen from our layout diagram, there are two Frölich, or Thyssen, hydraulic rail brakes situated at the lower end of the reception sidings, and three in the valley beyond the sharp gradient which imparts the necessary impetus to vehicles detached from the trains to carry them to the ends of the sidings for which they are destined. Control of the brakes is exercised, as at Hamm, from a control tower. The capacity of the yard before mechanisation was a maximum of 1,800 trucks a day. After mechanisation 2,240 trucks could be dealt with in normal circumstances, and the number could be increased in times of pressure.

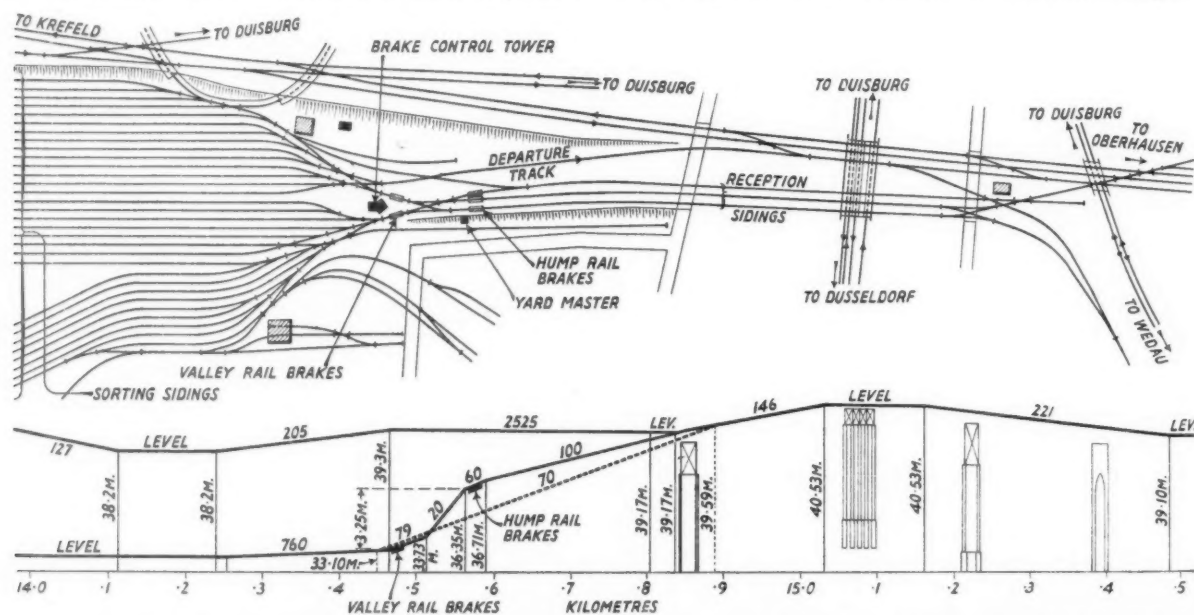


Control tower and hydraulic rail brakes on the gravity approach to the sorting sidings at Duisburg (Hochfeld Süd) mechanised marshalling yard

The average cost of shunting 50 wagons at Duisburg before mechanisation was 23.40 Marks, a figure which was reduced to 5.85 Marks after mechanisation. The latter figure compares with 9.8 Marks at Hamm; the difference is accounted for by the necessity for pushing the trains up to the hump, a procedure eliminated in a gravity yard like that at Duisburg.

Railway Reconstruction in Belgium

Further information has been received from American sources since the publication at page 152 of our February 7 issue of brief details about railway reconstruction in Belgium.



Layout and gradient profile of the Reichsbahn mechanised gravity marshalling yard at Duisburg (Hochfeld Süd)

At present it seems that the operation of a portion of the Belgian railway system is under the control of the railway administration, while other parts are worked by the railway management of the German Army of Occupation. Emergency repairs between May and the end of 1940 are said to have cost 220 million francs, but no exchange basis is stated. During the period of fighting at the time of the German invasion of Belgium last May, 137 km. (85 miles) of line are recorded as having been destroyed, including 78,000 sleepers and 310 points and crossings. It is now stated that 339 bridges and tunnels were destroyed; this compares with the figures of 493 railway bridges, 69 overbridges at road-rail crossings, and 17 tunnels, previously stated to have been put out of use. Presumably the difference between the smaller and larger figures may be accounted for by those structures which were damaged but capable of fairly rapid restoration. It is now said that 9 important signal boxes were completely destroyed and 69 others suffered substantial damage. In all, 600 railway buildings were affected, of which 80 were completely destroyed. Of 167 water towers and track trough installations, 40 were rendered completely useless. It is impossible yet to estimate the damage to rolling stock, but the U.S.A. Bureau of Foreign & Domestic Commerce reports that most of the locomotives and carriages which were removed to France during hostilities have now been returned to Belgium.

Paris Metro

It is reported from American sources that the German Occupation Forces have introduced a new rule on the Paris Metro, reserving first class carriages solely for German troops, and allowing French travellers to use only the second class; there is no third class on the Paris underground railways.

Italian Frontier Traffic

The German-Italian frontier has been closed to travellers, except members of official missions, according to news received by the Stockholm correspondent of the Independent French Agency. Travel bureaux are stated to have been informed that all visas for Italy have been cancelled since Monday, February 10.

Reports reaching Zurich on February 13 said the Yugoslav-Italian frontier between Susak and Fiume has been closed. All frontier passes issued by the Italian authorities to the local Yugoslav population have been revised, and all Italian visas issued before February 5 have been cancelled.

In last week's issue, at page 179, we recorded the suspension of ordinary traffic between Switzerland and Italy from February 6. It also appears that there have been very severe limitations for some time past on frontier traffic between Italy and "unoccupied" France. Italy will thus seem to have isolated herself from all her neighbours, excepting for special traffics agreeable to the Italian authorities.

Traffic Dislocation in Southern Italy

Last week it was announced in Rome that goods traffic had been suspended on the railway lines connecting Brindisi, Bari, Taranto, Foggia, and Lecce, as well as all stations in the province of Naples, "because of the present transport situation and forwarding difficulties."

This dislocation of the railway service in Southern Italy has been associated in the press of various countries with the landing in Southern Italy of British parachute troops or "soldiers dressed in recognised military uniform, dropped by parachute," to use the phrase adopted by the British Ministry of Information, which added in its official announcement that no statement could be made at present about the result of the operation, but said that some of the men had not returned to their base. The instructions of these British parachute troops were to demolish certain objectives connected with the ports in Southern Italy. So far it is not known how extensive or widespread was this British parachute troop landing, and on the information at present available there is no adequate reason for supposing that the railway dislocation was the result of the activities of these parachutists. It is more likely that their landing resulted in the temporary closure to civilian traffic of the area in which goods traffic was suspended, as part of the Italian

defence plans against a possible landing of the Allied Forces. On February 17 the Italian authorities repudiated the statement that railway goods traffic had been suspended in Southern Italy, and said that on the contrary some restrictions on the railway services had been abolished.

Roumania

The British Government has decided that it must now regard Roumania as territory under enemy occupation. From February 15, therefore, Roumania is regarded as an enemy destination for contraband purposes, and all goods of Roumanian origin or ownership are liable to seizure.

Railway Link between Hungary and Russia

Negotiations are proceeding for opening a railway between Hungary and the U.S.S.R., says a message from Budapest to the Official Italian News Agency dated February 15. The junction of the two railways will be at Munkacs. It is hoped that the line will be open in the middle of March. Hungary and the U.S.S.R. have had a common frontier since the occupation of Poland.

Railway Services in Bulgaria

A drastic curtailment of the normal train services on the Bulgarian State Railways was announced on February 11. On the analogy of Hungary and Roumania, this has been widely interpreted in the press of the world as a prelude to the occupation of the Bulgarian railways by German troop train movements. Groups of "civilian" Germans were reported on February 14 to be occupying Bulgarian railway stations.

Ceylon Railway Carnival for War Funds

The Ceylon Government Railway Sports Club recently staged a most successful carnival entitled "The Rhythm of the Wheels," which realised £2,700 in aid of war funds. The grounds of the carnival were laid out as an old English village and this was served by a 300-yd. length of 2 ft. 6 in. gauge railway running round the grounds. The Kelani Valley motor trolley, camouflaged as a diesel railcar, ran trips over it at 20 cents a time. This miniature line was controlled by tablet working, tablet-locked signals, electric signal reversers, and other modern safety devices. It was manned by girls and boys, children of the railway staff, who worked the instruments and railcar and, in fact, the whole railway, with great enjoyment and zest.

The village was complete with a blacksmith's forge (where real horse-shoes were sold), a public house, stocks, a whipping-post, a dolls' "At home" run by Mrs. Hills, wife of the General Manager—which made £172 by the sale of dolls—flower, cracker, and other stalls, an amusement park, and a church—a façade only of canvas and battens—with bells. An amateur cabaret and dancing, with dining facilities, and a cocktail and other bars completed the picture. Originally intended to run for four days, the carnival, in response to general appeal, kept open for two weeks and was visited by many Anzacs and sailors who were passing through Colombo. Some illustrations of the carnival are reproduced at page 201.

Air Lines

From the somewhat meagre information available in this country it appears that for the moment there is no direct communication by regular air service between Spain and Portugal on the one hand and Italy and Germany on the other. Nevertheless, it is of interest to place on record some brief particulars about the working of such services towards the end of last year which have recently reached this country through American sources. The Lisbon—Rome air service, which had previously been worked on a schedule to three trips a week, is reported to have become a daily service on September 17 last. On the direct air line between Berlin and Lisbon both passenger and goods were carried and the following were the rates in force: Berlin to Barcelona \$82 (U.S.A.), to Madrid \$108, and to Lisbon \$136. From Stuttgart to the places named the fare was \$28 less. For round trips a reduction of 20 per cent. was granted on the return fare. Excess luggage charges per kg. were 62 cents from Berlin to Barcelona, 82 cents to Madrid, and \$1.02 to Lisbon; from Stuttgart they were 22 cents less.

Government Control of Railways

Estimates of the pooled revenue receipts and expenses and resultant net revenue of the controlled undertakings for the year ended December 31, 1940

In Command Paper 6168 presented to Parliament by the Minister of Transport in February, 1940, an outline was given of the financial arrangements between the Minister, the four amalgamated railway companies and the London Passenger Transport Board. With the exception of the net revenue derived from investments in road transport undertakings and from ownership of and investments in railways in Northern Ireland and Eire, the revenue receipts and expenses of the controlled undertakings are pooled from September 1, 1939, and the resultant net revenue for each accounting period is appropriated in accordance with those arrangements.

In Command Paper 6216, presented to Parliament by the Minister of Transport in July, 1940, estimates were given

of the pooled receipts and expenses and resultant net revenue of the controlled undertakings for the period of Government control up to June 30, 1940.

Estimates for the year ended Decem-

ber 31, 1940, issued in the form of a White Paper on February 19 (Command Paper 6252), show that the results of the pool are approximately as shown in the accompanying table. The figures are subject to examination on behalf of His Majesty's Government. "Other items of receipts and expenditure included in the pool (net)" includes the net revenue from ancillary businesses (e.g., steamboats, docks, hotels, collection and delivery of parcels and goods) and rents, interest, and other miscellaneous items.

		Year ended December 31, 1940 £
Receipts and expenditure of the controlled railway companies and joint lines in respect of railway working and of the London Passenger Transport Board in respect of railway working and road services:—		
Receipts:		
Passenger	...	104,785,000
Freight	...	140,498,000
Miscellaneous	...	2,709,000
Total	...	247,992,000
Expenditure, including provision on account of war damage	...	203,480,000
Net receipts	...	44,512,000
Other items of receipts and expenditure included in the pool (net)	Dr.	1,749,000
Net revenue of the pool	...	£42,763,000

Note.—The guaranteed net revenue for a full year, including minor railways and worked lines and after providing for interest on the Southern Railway debenture stock issued in 1939, is £39,850,000.

RAILWAY AND OTHER REPORTS

British Main-Line Railways and London Transport.—The Great Western Railway, the London Midland & Scottish Railway Company, the London & North Eastern Railway Company, the Southern Railway Company, and the London Passenger Transport Board issued statements on Wednesday last, February 19, in the following terms:—

"The net revenue of the controlled railway companies and the London Passenger Transport Board for the year 1940 which is to be pooled in accordance with the financial arrangements agreed with H.M. Government is estimated at £42,763,000. The guaranteed net revenue for a full year is approximately £39,850,000. The gross receipts of the controlled railway companies in respect of railway working and of the London Passenger Transport Board in respect of railway working and road services were £41,707,000 more than in 1939, whilst the relative expenditure increased by £34,876,000. The increase in passenger receipts amounted to £2,237,000; in freight receipts £38,448,000; and in miscellaneous receipts £1,022,000. Other items included in the net revenue of the pool show a reduction of £4,406,000."

In addition, the individual companies gave details of the proportion of the estimated total net revenue to which they are entitled, and their proposed distribution of this, as follow:—

Great Western Railway Company.—Of the estimated total net revenue of £42,763,000 for the year 1940, the Great Western Railway Company's proportion is £6,588,000 and this, together with the net result of transactions not coming within the scope of the pool of net revenue, gives a total of £6,793,987, an increase as compared with the year

1939 of £186,663. The balance brought forward from the previous year was £202,099, making the total sum available for distribution £6,996,086. After meeting the interest and dividends on the pre-ordinary stocks, there remains available for ordinary dividend £2,006,318. The directors have decided to recommend the payment of a dividend for the half-year ended December 31 of £2 10s. per cent. on the consolidated ordinary stock, making £4 per cent. for the year, leaving a balance to be carried forward of £289,129. The dividend warrants will be posted on or about the 17th proximo.

London Midland & Scottish Railway Company.—Of the estimated total net revenue of £42,763,000 for the year 1940, the L.M.S.R. Company's proportion is £14,423,000 and this together with the net revenue from other sources not coming within the scope of the pool of net revenue for the year 1940 gives a total of £14,707,000. Out of this, £300,000 has been set aside for wartime contingencies making, with the addition of £101,000 brought forward from 1939, a total of £14,508,000 available for interest on debenture stocks and dividends on share capital. At the meeting of the board of the L.M.S. Railway Company it was decided to recommend the following dividends to be paid on March 19, and to carry forward £166,000 to 1941:—

4 per cent. guaranteed stock, 4 per cent. preference stock, and 4 per cent. preference stock (1923). At £2 per cent. actual, less income tax at 8s. 6d. in the £, making with the interim payments £4 per cent. for the year 1940.

Ordinary Stock. At £1 10s. per cent. actual, less income tax at 8s. 6d. in the £, for the year 1940.

A stamped proxy form for the ordinary meeting has been sent to each pro-

prietor holding £2,500 of stock and over, and will be sent to any other proprietor who so wishes if application is made to the Secretary.

London & North Eastern Railway Company.—Of the estimated total net revenue of £42,763,000 for the year 1940, the London & North Eastern Company's proportion is £9,864,000 and this, together with the net result of transactions not coming within the scope of the pool of net revenue, gives the total of £10,351,000, an increase as compared with the year 1939 of £1,080,000. The balance brought forward from the previous year was £83,000, making the total sum available for distribution £10,434,000. After meeting the interest on the debenture stocks and the dividends on the guaranteed stocks, and setting aside £250,000 to the fund for contingencies, the directors recommend that, subject to final audit, dividends be paid as under:—

A final dividend of 2 per cent. on the 4 per cent. first preference stock, making with the interim dividend of 2 per cent. already paid 4 per cent. for the year.

A final dividend of 2½ per cent. on the 5 per cent. redeemable preference stock (1955) making with the interim dividend of 2½ per cent. already paid 5 per cent. for the year, and

A dividend at the rate of 2 per cent. for the whole year on the 4 per cent. second preference stock. In each case less Income Tax at 8s. 6d. in the £, leaving the balance of £85,000 to be carried forward. Warrants for the dividends on the above-mentioned preference stocks will be posted on March 19.

Southern Railway Company.—The Southern Railway Company's proportion of the estimated net revenue pool of £42,763,000 for the year 1940 is £6,610,000, to which must be added the net result of transactions not

coming within the scope of the net revenue pool, making a total net revenue of £6,755,790, an increase as compared with the year 1939 of £13,214. The balance brought forward from the previous year was £103,543, making the total sum available for distribution £6,859,333. After meeting the interest and dividends on the pre-ordinary stocks, the amount available for dividend on the ordinary stocks for the year is £1,864,888. The directors have resolved to recommend the proprietors to declare the following dividends:—

A final dividend of $2\frac{1}{2}$ per cent. on the preferred ordinary stock, making, with the interim dividend of $2\frac{1}{2}$ per cent. already paid, 5 per cent. for the year.

$1\frac{1}{4}$ per cent. for the whole year on the deferred ordinary stock.

For the previous year a dividend of 5 per cent. was paid on the preferred stock and $1\frac{1}{4}$ per cent. was paid on the deferred stock. The balance carried forward is £91,930 compared with £103,543. It is intended to pay the dividends on Friday, March 28, or so soon thereafter as circumstances permit. Income Tax will be deducted at the rate of 8s. 6d. in the £.

London Passenger Transport Board.—The London Passenger Transport Board announces that under the Railways Agreement (Powers) Order (London Passenger Transport Board), 1940, the financial year of the board has been changed and as from January 1, 1940, will end on December 31 instead of June 30 in each year. The period from July 1, 1939, to December 31, 1939, has been treated as a transitional period in order to effect the change in the financial year and the interim payment of $1\frac{1}{2}$ per cent. on the "C" stock made on March 27, 1940, is deemed to be the final payment of interest in respect of such transitional period.

The board now announces that a final payment of interest on London Transport "C" stock for the year ended December 31, 1940, will be made by the board's registrar, the Bank of England, on March 19, 1941, to all holders of London Transport "C" stock registered or inscribed in the books of the Bank of England at the close of business on February 21, 1941, at the rate of $2\frac{1}{4}$ per cent. actual, less Income Tax at 8s. 6d. in the £ making, with the interim payment of $\frac{3}{8}$ per cent. actual on August 23, 1940, a total of 3 per cent. for the year. The sum of £1,825 remaining after the payment of this interest, being less than $\frac{1}{8}$ per cent. on the London Transport "C" stock outstanding, has in accordance with Section 39 (7) (ii) of the London Passenger Transport Act, 1933, been transferred to the London Transport "C" stock interest fund.

Of the estimated total net revenue of £42,763,000 of the controlled railway companies and the London Passenger Transport Board, the board's proportion is £4,811,981. Adding a profit on the realisation of investments of £13,401, together with an amount of £27,854 transferred from the London Transport "C" stock interest fund, the total sum available for appropriation is £4,853,236. Interest on the prior charge London

Transport stocks requires £4,080,447, and a payment on account of interest on the "C" stock at the rate of $\frac{3}{8}$ per cent. was paid on August 23, 1940, requiring £192,741. There remains a sum of £580,048 which is sufficient to meet the final payment of interest on the "C" stock at the rate of $2\frac{1}{4}$ per cent. already referred to, making 3 per cent. for the year. The remaining balance of £1,825 has been transferred to the London Transport "C" stock interest fund.

The board also announces that it will shortly transmit to the Minister of Transport the report and copies of the statement of accounts for the period July 1, 1939, to December 31, 1940, and of the auditors' report. An abridged report with summary of accounts will be posted on March 13, 1941, to all stockholders (first-named in joint accounts) free of charge. Copies of the full report and statement of accounts will be on sale at the price of one shilling at the offices of the board, 55, Broadway, Westminster, London, S.W.1, on and after March 14, 1941.

The following is a tabulation of the dividend distributions of the four main-line railway companies over an eleven-year period:—

	1930	1931	1932	1933	1934	1935	1936	1937	1938	1939	1940
	%	%	%	%	%	%	%	%	%	%	%
Great Western											
Ord. Stock ...	$5\frac{1}{2}$	3	3	3	3	3	3	4	$\frac{1}{2}$	$3\frac{1}{2}$	4
London Midland & Scottish											
Ord. Stock ...	2	$\frac{1}{2}$	Nil	Nil	Nil	Nil	$1\frac{1}{2}$	$1\frac{1}{2}$	Nil	$1\frac{1}{2}$	$1\frac{1}{2}$
London & North Eastern											
Pref. Ord. 5%	$\frac{1}{2}$	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
2nd Pref. 4%	4	1	Nil	Nil	Nil	Nil	$\frac{1}{2}$	$1\frac{1}{2}$	Nil	$\frac{1}{2}$	2
1st Pref. 4%	4	4	1	2	$3\frac{1}{2}$	$3\frac{1}{2}$	4	4	Nil	4	4
Red. Pref. 5%	5	5	$1\frac{1}{2}$	$2\frac{1}{2}$	$4\frac{1}{2}$	$4\frac{1}{2}$	5	5	Nil	5	5
Southern											
Pref. ...	5	4	1	3	4	5	5	5	5	5	5
Def. ...	$1\frac{1}{2}$	Nil	Nil	Nil	Nil	Nil	$\frac{1}{2}$	$1\frac{1}{2}$	Nil	$1\frac{1}{2}$	$1\frac{1}{2}$

STAFF AND LABOUR MATTERS

Cost of Living

The *Ministry of Labour Gazette* for January contains information as to the budgets of agricultural workers which was obtained by the Ministry in 1937 and 1938, when it also obtained information as to the weekly expenditure of industrial households. An article on the enquiry into the expenditure of industrial households appeared in THE RAILWAY GAZETTE for January 24. The number of agricultural households

from which budgets were obtained by the Ministry was 1,491, as compared with 8,900 industrial households. For the purpose of the enquiry the agricultural household is one in which the head is engaged in an agricultural occupation, including farm work, forestry, market gardening or horticulture. Many of the households include wage earners other than the head of the family, and a large proportion of these supplementary wage

earners were employed in industrial, commercial, or clerical occupations.

The average number of persons in the agricultural households which supplied the complete series of four budgets was approximately 3.8, of whom 2.4 were aged 18 years or over, and 1.1 were under 14 years. The number of wage or salary earners averaged approximately 1.6 a household, and the average number of days worked by these earners in the four weeks for which the particulars were obtained was slightly over $5\frac{1}{2}$ a week. The above is a summary of the expenditure shown in the budgets of both industrial and agricultural households.

Item	Industrial households		Agricultural households	
	Average weekly expenditure	Proportion of total expenditure	Average weekly expenditure	Proportion of total expenditure
	s. d.	Per cent.	s. d.	Per cent.
Rent, rates, etc. ...	10 10	12.7	4 9	8.3
Food ...	34 1	40.1	27 9	48.4
Clothing and footwear ...	8 1	9.5	5 3	9.1
Fuel and light ...	6 5	7.6	4 11	8.6
Other items ...	25 7	30.1	14 8	25.6
Total all items ...	85 0	100.0	57 4	100.0

Contracts and Tenders

During January the New Zealand Government placed orders for Government contracts in Great Britain of a value of £46,000. The purchases were chiefly of electrical and railway material, and the contracts were mainly placed with firms in the Midlands and North of England.

NOTES AND NEWS

Canadian Pacific Railway.—Gross earnings for December, 1940, were \$16,335,667, an increase of \$2,604,498 as compared with December, 1939; operating expenses were \$11,529,461, giving net earnings of \$4,806,206, an increase of \$424,237.

Level Crossing Accident, L.N.E.R.—A passenger train from King's Lynn to Spalding collided with an army lorry at a level crossing at Sutton Bridge on February 12 and was derailed. The lorry was demolished and its driver killed. There were no casualties on the train.

Accident in Spain.—According to telegraphic advices from Spain, 26 persons were killed and many injured on February 16, when three carriages of an electric train were blown into the river between Bilbao and San Sebastian. The train had stopped on a bridge after the power supply on the line had been interrupted by the storm.

Sentinel Waggon Deal.—The directors of Metal Industries Limited, of Glasgow, which made an offer for the whole of Sentinel Waggon Works (1936) ordinary and preference shares, state that as acceptances for the requisite number of issued shares—namely, 90 per cent.—have not yet been lodged, they have decided to defer consideration of the matter until their next meeting.

The Brentwood Collision, L.N.E.R.—Major G. R. S. Wilson on February 14 opened the Ministry of Transport inquiry into the collision between a down Norwich and a down Southend train near Brentwood, L.N.E.R., on February 10, as a consequence of which seven persons, all in the Norwich train, lost their lives. Mr. V. M. Barrington Ward, Operating Superintendent, Southern Area, L.N.E.R., explained that the Norwich train had stopped on the bank owing to shortage of steam, and was properly protected by colour-light signals which were working correctly, when it was run into from the rear by the Southend train at an estimated speed of 30-40 m.p.h. The driver and fireman of the

Southend train are still unable to give evidence, and Major Wilson has decided to continue the inquiry in private.

Railway Accident in Norway.—A German military train was recently derailed at Kloftefjells tunnel, near Dalen, Western Norway, according to reports received in Stockholm, quoted by the British United Press. Railway connection between Bergen and Oslo was cut for several days, the reports state.

Railway Agreed Charges.—A large number of applications for agreed charges under the provisions of section 37 of the Road & Rail Traffic Act of 1933 have been lodged with the Railway Rates Tribunal, and may be inspected at the District Goods Manager's Office, London Midland & Scottish Railway, Broad Street station, E.C.2. Notice of objection to any of the applications must be filed not later than March 4.

Buses between Edgware Station and Canons Park.—To provide a new service between Wealdstone, Belmont, Canons Park, and Edgware station (Underground), London Transport buses on route 18 (Wembley—Harrow Weald) on Wednesday last, February 19, were diverted at Wealdstone via Locket Road, Belmont station, Weston Drive, and Wemborough Road to Edgware station. The service on route 113 between Edgware station and Canons Park, which ran only at busy weekday hours, was then withdrawn; route 113, however, continues to operate between Oxford Circus and Edgware station.

G.N.R. Ireland Application for Enhanced Merchandise Rates.—On February 11, the Great Northern Railway Company (Ireland) applied to the Railway Tribunal for sanction to increase merchandise rates and charges in Eire beyond the maximum charges provided for in Section 31 of the Railways Act, 1924. The company stated that, with certain exceptions, its rates and charges had already been increased; as from January 1, by about 25 per cent. in Northern Ireland, and also in Eire in cases where the maximum charges in the Act had not been reached. The commodities on which

the company proposes to increase the surcharge to 25 per cent. include bricks, basic slag, grain, artificial manures, and certain vegetables, fruits, and timbers. The General Manager stated that improvements in receipts could not keep pace with increasing expenditure, including an increased salary and wages bill of over £90,000 higher than in pre-war years. Livestock, passengers, parcels, and mineral traffic are not included in the proposed increases.

British and Irish Railway Stocks and Shares

Stocks	Highest 1940	Lowest 1940	Prices	
			Feb. 18, 1941	Rise/ Fall
G.W.R.				
Cons. Ord.	52	22½	36	+1
5% Con. Pref.	103½	58	89	—
5% Red. Pref. (1950) ..	105½	88	99½	—
4% Deb.	107½	90½	104½	—
4½% Deb.	108½	96½	108	—
4½% Deb.	114½	96	113½	—
5% Deb.	124	106	122½	—
2½% Deb.	66½	57	63	—
5% Rt. Charge	117½	97	118	—
5% Cons. Guar.	117	90½	114	—
L.M.S.R.				
Ord.	24½	9	14	—½
4% Pref. (1923)	60½	21½	38½	—1
4% Pref.	70½	35	53½	—1
5% Red. Pref. (1955) ..	94½	60	81½	—
4% Deb.	101½	81	98½	—
5% Red. Deb. (1952) ...	109½	102	108	—
4% Guar.	93½	65	89	—
L.N.E.R.				
5% Pref. Ord.	8½	1½	3	—
Def. Ord.	4½	1½	1½	—1
4% First Pref.	60	20	36½	—1
4% Second Pref.	22½	6½	11	—½
5% Red. Pref. (1955) ...	80	34½	57½	—
4% First Guar.	86½	56	79	—
4% Second Guar.	77½	37	64	—
3% Deb.	73½	54½	70½	—
4% Deb.	97½	74	93	—
5% Red. Deb. (1947) ...	107	96½	103	—
4½% Sinking Fund Red. Deb.	104	98	100½	—
SOUTHERN				
Pref. Ord.	79	34	49½	+1
Def. Ord.	22½	7	10½	—½
5% Pref.	104½	58½	87	—
5% Red. Pref. (1964) ...	105	85	94½	—
5% Guar. Pref.	116½	90	115	—
5% Red. Guar. Pref. (1957) ..	114½	94	110½	—
4% Deb.	106½	84½	104½	—
5% Deb.	122½	100	122½	—
4% Red. Deb. (1962-67) ..	106	96½	103	—
4% Red. Deb. (1970-80) ...	106½	93	103	—
FORTH BRIDGE				
4% Deb.	95½	87	86½	—
4% Guar.	93½	81½	85½	—
L.P.T.B.				
4½% "A"	116	103	111½	—
5% "A"	121½	107	120	—
4½% "T.F.A."	105½	101	102½	—
5% "B"	116	102	106	—
5% "C"	65½	24	34	—
MERSEY				
Ord.	26	18½	23½	—
4% Perp. Deb.	92½	86½	91½	—
3% Perp. Deb.	68	63	60½	—
3% Perp. Pref.	57	50½	54½	—
IRELAND				
BELFAST & C.D.				
Ord.	4	3	4	—
G. NORTHERN				
Ord.	4½	1½	4½	—½
G. SOUTHERN				
Ord.	12½	4	6½	—
Pref.	15½	6	10	—½
Guar.	36	15	26	—½
Deb.	55½	40	52	—

Irish Traffic Returns

IRELAND	Totals for 5th Week			Totals to Date		
	1941	1940	Inc. or Dec.	1941	1940	Inc. or Dec.
Belfast & C.D. (80 miles)	pass. 2,443 goods 906 total 3,349	pass. 1,910 goods 406 total 2,316	+ 533 + 500 + 1,033	pass. 14,557 goods 5,328 total 19,885	pass. 11,771 goods 2,461 total 14,232	+ 2,786 + 2,867 + 5,653
Great Northern (543 miles)	pass. 10,950 goods 9,700 total 20,650	pass. 7,800 goods 9,850 total 17,650	+ 3,150 + 150 + 3,000	pass. 56,900 goods 67,550 total 124,450	pass. 43,100 goods 56,400 total 99,500	+ 13,800 + 11,150 + 24,950
Great Southern (2,076 miles)	pass. 34,599 goods 49,797 total 84,396	pass. 27,060 goods 42,850 total 69,910	+ 7,539 + 6,947 + 14,486	pass. 159,574 goods 244,622 total 404,196	pass. 138,633 goods 205,356 total 343,989	+ 20,941 + 39,266 + 60,207
L.M.S.R. (N.C.C.) (247 miles)	pass. 6,520 goods 6,160 total 12,680	pass. 3,390 goods 3,280 total 6,670	+ 3,130 + 2,880 + 6,010	pass. 31,960 goods 27,490 total 59,450	pass. 18,450 goods 15,330 total 33,780	+ 13,510 + 12,160 + 25,670

OFFICIAL NOTICES

Great Western Railway Company

NOTICE IS HEREBY GIVEN that the ANNUAL GENERAL MEETING of the Proprietors of this Company will be held in London, at Paddington Station, on Wednesday, the 12th day of March, 1941, at Half past Eleven o'clock in the morning, for the general purposes of business.

CHARLES J. HAMBRO,
Chairman.
F. R. E. DAVIS,
Secretary.

Paddington Station,
London, W.2.
17th February 1941.

Great Western Railway Company

NOTICE IS HEREBY GIVEN that a SPECIAL GENERAL MEETING of the Proprietors of this Company will be held in London, at Paddington Station, on Wednesday, the 12th day of March, 1941, at Twelve o'clock noon—or as soon thereafter as the Annual General Meeting of the Company convened for Half past Eleven o'clock in the morning on the same day is concluded or adjourned—when the following Bills will be submitted for the consideration and, if thought fit, for the approval of such meeting, viz.:—

"A Bill to provide for a superannuation fund for certain of the salaried staff of the Great Western Railway Company in substitution for the Great Western Railway Superannuation Scheme established under the provisions of the Great Western Railway (Superannuation Scheme) Act 1908; and for other purposes."

"A Bill to authorise persons holding offices or places of trust or profit under the Great Western Railway Company to become Directors of the said Company and for other purposes."

CHARLES J. HAMBRO,
Chairman.
F. R. E. DAVIS,
Secretary.

Paddington Station,
London, W.2.
17th February, 1941.

Southern Railway Company

NOTICE IS HEREBY GIVEN that the next Annual General Meeting of the Southern Railway Company will be held at the Charing Cross Hotel, Strand, in the County of London, on Wednesday, the 12th March, 1941, at 11.30 a.m., for the purpose of receiving the Accounts for the past year and transacting general business.

T. E. BRAIN,
Acting Secretary.

Waterloo Station, London,
21st February, 1941.

London Midland & Scottish Railway Company

NOTICE is hereby given that the next ORDINARY GENERAL MEETING of the London Midland & Scottish Railway Company will be held at FRIENDS HOUSE, EUSTON ROAD, LONDON, N.W., on Friday, the 7th March, 1941, at 11.30 a.m. precisely, for the transaction of the general business of the Company.

STAMP OF SHORTLANDS, Chairman.
G. R. SMITH, Secretary.

Euston Station,
London, N.W.1.
20th February, 1941.

ALL firm in Surrey requires THOROUGHLY COMPETENT Rates Checking Clerk. Must be fully conversant railway, haulage and shipping rates. State previous experience, age and salary required. Only applicants not liable military service entertained.—Box 9369, c/o Dawson's, 27, Pilgrim Street, E.C.4.

IT is desired to secure the full commercial development in the United Kingdom of BRITISH PATENT No. 458,678 which relates to Regenerative Transmission Systems for Vehicles either by way of the grant of licences or otherwise on terms acceptable to the Patentee. Interested parties desiring copies of the patent specification and further particulars, should apply to STEVENS, LANGNER, PARRY & ROLLINSON, 5 to 9, Quality Court, Chancery Lane, London, W.C.2.

London & North Eastern Railway Company

NOTICE IS HEREBY GIVEN that the Eighteenth Ordinary General Meeting of the Proprietors of the London & North Eastern Railway Company will be held at Grosvenor House, Park Lane, London, W.1, on Friday, the 7th day of March, 1941, at 2 p.m. for the purpose of the general business of the Company, including the determination of the Auditors' remuneration.

Dated this 19th day of February, 1941.

By Order,

P. J. DOWSETT,
Secretary.

Marylebone Station,
London, N.W.1.

OFFICIAL ADVERTISEMENTS intended for insertion on this page should be sent in as early in the week as possible. The latest time for receiving official advertisements for this page for the current week's issue is noon on Wednesday. All advertisements should be addressed to:—*The Railway Gazette*, 33, Tothill Street, Westminster, London, S.W.1.

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Questions in Parliament

Saturday Facilities for Workers

Mr. H. Brooke (Lewisham West—C.), on February 12, asked the Minister of Transport whether he was aware that Saturday was now a full working day for many Londoners; and would he consult with London Transport for improvement of transport facilities in the early evening of that day so as to help these workers to get home.

Mr. F. Montague (Parliamentary Secretary to the Ministry of Transport) said: The Minister of Transport had no reason to think that transport facilities for London workers on Saturday evenings were inadequate, but he would be pleased to look into any specific case of difficulty.

Fire Watchers' Tickets

Mr. Vernon Bartlett (Bridgwater—Ind.), on February 12, asked the Minister of Transport (1) whether the validity of workmen's tickets on the railways would be extended to cover a period of two days for fire-watchers who had to spend the night at their works or offices; and (2) whether he could arrange that workmen's tickets on the railways should be available for fire-watchers proceeding to their duties in the evening.

Mr. F. Montague: The Minister of Transport is waiting a full report from the Railway Executive Committee upon the issues raised.

Sheffield and Leeds Service

Major J. Milner (Leeds South-east—Lab.), on February 13, asked the Minister of Transport whether he was aware that the 7.30 p.m. train from Birmingham which originally proceeded to Leeds now stopped at Sheffield; that upwards of 100 Servicemen and others had in consequence to wait at Sheffield some hours every night and difficulty was caused to the station staff; and whether he would arrange for the train to continue to Leeds in future.

Lt.-Colonel Moore-Brabazon (Minister of Transport) wrote in reply: I am making enquiries and will communicate later with my hon. and gallant friend

Parliamentary Notes

The following Bills were read a second time in the House of Commons on February 11 and referred to the Examiners of Petitions for Private Bills:—

Great Western Railway (Variation of Directors' Qualification) Bill.
Great Western Railway (Superannuation Fund) Bill.
London Midland & Scottish Railway Bill.
Railway Clearing System (Superannuation Fund) Corporation Bill.
Southern Railway (Superannuation Fund) Bill.

Forthcoming Meetings

Feb. 25 (Tues.).—Oldham, Ashton-under-Lyne & Guide Bridge Junction Railway Company (Ordinary annual), Board Room, Marylebone station, London, at 11 a.m.

Feb. 25 (Tues.).—Great Northern Railway Company (Ireland) (Ordinary Annual general), Gresham Hotel, Upper O'Connell Street, Dublin, at noon.

Feb. 26 (Wed.).—Isle of Man Steam Packet Co. Ltd. (Annual general), Imperial Buildings, Douglas, I.O.M., at 11 a.m.

Feb. 27 (Thurs.).—Belfast & County Down Railway (Annual general), Board Room, Queen's Quay, Belfast, at 11.30 a.m.

Feb. 27 (Thurs.).—Dundalk, Newry & Greenore Railway Company (Ordinary general), Euston station, London, N.W., at 10.40 a.m.

Feb. 28 (Fri.).—Manchester Ship Canal Company (Ordinary general), Albert Hall, Peter Street, Manchester, at noon.

Mar. 7 (Fri.).—London Midland & Scottish Railway Company (Ordinary general), Friends House, Euston Road, London, N.W., at 11.30 a.m.

Mar. 7 (Fri.).—London & North Eastern Railway Company (Ordinary general), Grosvenor House, Park Lane, W.1, at 2 p.m.

Mar. 12 (Wed.).—Great Western Railway Company (Annual general), Paddington station, W.2, at 11.30 a.m.

Mar. 12 (Wed.).—Southern Railway Company (Annual general), Charing Cross Hotel, Strand, W.C., at 11.30 a.m.

Railway Stock Market

In view of the uncertainty attaching to developments in the Balkans and Far East, the stock and share markets have continued to adopt a cautious attitude. No heavy selling was in evidence, but most securities tended to slightly lower prices owing to the inactive conditions prevailing. Nevertheless, home railway junior stocks showed a fair amount of activity on dividend influences, and in some instances they were higher on balance. Bearing in mind all factors in the position, the dividend decisions and net revenue figures, which are the subject of editorial comment elsewhere in this issue, cannot be regarded as unsatisfactory. On the other hand, it must be expected that the junior securities will continue to be valued on a high-yield basis, because of the difficulty of assessing the future. The latter will turn on the manner the financial agreement with the Government is remodelled so as to provide for advancing costs of wages and operation and also for revised proposals in respect of war damage to the railways, arising from the compulsory insurance plan and the War Damage Bill.

It will be recalled that twelve months ago the terms of the financial agreement with the Government had just been pub-

lished, and home railway stocks were in strong demand at rising prices, because of the guaranteed minimum earnings and the prospect that stockholders would derive some benefit from the rapid expansion in traffics under war conditions. Moreover, a hopeful view as to the outlook was also induced by the fact that, with the exception of L.N.E.R. second preference, the dividends paid for 1939 were fractionally better than the dividend rates based on the guaranteed minimum earnings. Consequently, at that period there seemed grounds for the view that the railways would derive reasonable benefit from the increasing volume of traffic, because, apart from the guaranteed minimum, the principle of their remuneration under the financial agreement is payment for work done. It is hardly surprising, therefore, that immediately following the 1939 dividend announcements, the junior stocks were a strong market. In fact they were close on the highest prices recorded in 1940, as is shown in the table in the next column, which also gives current prices and the lowest levels touched last year.

Last year the dividend announcements were made on varying dates in February, and incidentally towards the end of that month London Transport "C" stock was released from its minimum price, and

Extremes 1940 Feb. 1940 Feb. 1941			
G.W.R. Ord.	52	22½	51½
L.M.S.R. Ord.	24½	9	23½
L.M.S.R. Pref. (1923)	60½	21½	59
L.M.S.R. Pref.	70½	35	68
L.N.E.R. 1st Pref.	60	20	52½
L.N.E.R. 2nd Pref.	22½	6½	16½
Southern Pref. Ord.	79	34	77
Southern Def. Ord.	22½	7	19½

changed hands around 52; the current price is 34½. In respect of 1939, it may be recalled, the L.N.E.R. was the only main-line company whose revenue did not exceed the minimum guaranteed level, and this railway's stocks declined following the dividend announcement, the ½ per cent. paid on the second preference being below general estimates. Railway stocks are well above the lowest prices touched last year, but the latter, of course, were recorded following the capitulation of France, when there was a very heavy fall in all security values. The substantial difference between current prices and those of a year ago must be read in relation to the non-realisation of the hopes of equitable treatment for stockholders aroused by the financial agreement, due to rising costs. Wage increases made last year are calculated to call for £15,000,000 per annum, and it has already been necessary to raise railway charges by 16½ per cent. over pre-war, while a further increase is over-due, and in addition, new wage demands are under discussion.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

Railways	Miles open 1940-41	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffics to Date			Shares or Stock	Prices				
			Total this year	Inc. or Dec. compared with 1932		Totals		Increase or Decrease		Highest 1940	Lowest 1940	Feb. 18, 1941	Yield % (See Note)	
						This Year	Last Year							
South & Central America														
Antofagasta (Chili) & Bolivia	834	9.2.41	£ 14,030	+ 2,510	6	£ 101,620	£ 105,970	—	£ 4,350	Ord. Stk.	11½	3½	4½	Nil
Argentine North Eastern ...	753	8.2.41	ps. 119,100	+ ps. 4,600	32	ps. 4,874,800	ps. 5,001,900	—	ps. 127,100	6 p.c. Deb.	3½	1	2	Nil
Bolivar ...	174	Jan. 1941	3,200	500	4	3,200	3,700	—	500	Bonds	6½	5	6½	Nil
Brazil ...	2,801	8.2.41	ps. 1,840,000	+ ps. 60,000	32	ps. 40,498,000	ps. 41,323,000	—	ps. 825,000	Ord. Stk.	8	5	6	Nil
Buenos Ayres & Pacific ...	190	14.12.40	\$70,000	— \$6,000	24	\$2,141,800	\$2,564,000	—	\$422,200	Bonds	4½	1	3	Nil
Buenos Ayres Central ...	5,082	8.2.41	ps. 3,010,000	— ps. 181,000	32	ps. 65,769,000	ps. 72,200,000	—	ps. 6,431,000	Ord. Stk.	10½	3	4½	Nil
Buenos Ayres Great Southern ...	1,930	8.2.41	ps. 864,000	— ps. 72,000	32	ps. 22,504,000	ps. 24,660,000	—	ps. 2,156,000	"	8½	2	3½	Nil
Buenos Ayres Western ...	1,930	8.2.41	ps. 864,000	— ps. 72,000	32	ps. 22,504,000	ps. 24,660,000	—	ps. 2,156,000	"	8½	2	3½	Nil
Central Argentine ...	3,700	8.2.41	ps. 1,809,100	+ ps. 160,300	32	ps. 46,086,250	ps. 57,501,900	—	ps. 1,415,650	"	8½	2	3½	Nil
Do ...	—	—	—	—	—	—	—	—	—	Dfd.	4	1	1½	Nil
Cent. Uruguay of M. Video	972	8.2.41	25,106	— 581	32	685,681	646,517	+	39,164	Ord. Stk.	3½	1½	1½	Nil
Costa Rica ...	188	May 1940	17,282	— 7,020	48	193,339	245,516	—	52,177	Stk.	23½	14	15½	12½
Dorada ...	70	Jan. 1941	12,200	—	4	12,200	12,200	—	—	1 Mt. Db.	99	97½	98	6½
Entre Rios ...	810	8.2.41	ps. 213,100	+ ps. 3,500	32	ps. 6,972,200	ps. 7,956,300	—	ps. 984,100	Ord. Stk.	4	1½	1½	Nil
Great Western of Brazil ...	1,016	8.2.41	12,800	— 1,700	6	69,100	80,500	—	11,400	Ord. Sh.	4/-	1/-	1/-	Nil
International of Cl. Amer. ...	794	Sept. 1940	\$325,789	— \$37,196	39	\$4,405,419	\$4,486,381	—	\$80,962	"	4/-	1/-	1/-	Nil
Interoceanic of Mexico ...	—	—	—	—	—	—	—	—	—	Ist Pref.	9d.	9d.	1	Nil
La Guaira & Caracas ...	22½	Jan. 1941	6,125	— 1,485	4	6,125	7,610	—	1,485	"	6	4	4	Nil
Leopoldina ...	1,918	8.2.41	23,488	+ 2,829	6	133,815	129,808	+	4,007	Ord. Stk.	2½	1½	1½	Nil
Mexican ...	483	7.10.40	ps. 270,900	— ps. 300	14	ps. 3,816,500	ps. 3,954,000	—	ps. 137,500	"	2/11½	1½	1½	Nil
Midland of Uruguay ...	319	Dec. 1940	12,398	+ 1,938	26	69,025	55,678	+	13,347	"	—	—	—	Nil
Nitrato ...	386	31.1.41	5,705	— 3,039	4	10,252	18,669	—	8,417	Ord. Sh.	2½	1½	2	6½
Paraguay Central ...	274	8.2.41	\$2,615,000	— \$34,000	32	\$105,787,000	\$102,861,000	+	\$2,926,000	Pr. Li. Stk.	41	36	30½	19½
Peruvian Corporation ...	1,059	Jan. 1941	67,820	+ 13,235	30	461,145	464,990	—	3,845	Pref.	4	1	2	Nil
Salvador ...	100	21.12.40	£25,750	+ £3,170	25	£252,021	£296,854	—	£44,833	"	—	—	—	Nil
San Paulo ...	153½	2.2.41	35,625	— 4,567	5	177,625	166,122	+	11,503	Ord. Sh.	50	23	28	8½
Taital ...	160	Jan. 1941	2,295	— 1,365	31	19,435	17,800	+	1,635	Ord. Sh.	15/1½	1½	1½	Nil
United of Havana ...	1,353	8.2.41	30,477	— 1,535	32	513,312	568,899	—	55,587	Ord. Stk.	15/1½	1½	1½	Nil
Uruguay Northern ...	73	Dec. 1940	1,442	— 10	26	7,013	6,261	+	752	"	—	—	—	Nil
Canada														
Canadian National ...	23,637	7.2.41	981,004	+ 107,146	5	5,166,397	4,394,205	+	772,192	"	—	—	—	Nil
Canadian Northern ...	—	—	—	—	—	—	—	—	4 p.c.	Perp. Dbs.	86	68	89	4½
Grand Trunk ...	—	—	—	—	—	—	—	—	Ord. Stk.	105½	95½	102½	3½	
Canadian Pacific ...	17,153	7.2.41	670,600	+ 45,200	5	3,607,600	3,074,400	+	533,200	Ord. Stk.	9½	4½	8	Nil
India														
Assam Bengal ...	1,329	30.4.40	45,187	+ 6,529	4	135,060	120,437	+	14,623	Ord. Stk.	99½	71	99	3
Barsi Light ...	202	20.12.40	4,860	— 337	38	114,922	92,437	+	22,485	"	—	—	—	Nil
Bengal & North Western ...	2,086	31.1.41	267,075	+ 5,891	18	999,900	922,519	+	77,381	Ord. Stk.	283	234	282	5½
Bengal Doars & Extension ...	161	Sept. 1940	14,625	+ 508	26	78,405	66,243	+	12,162	"	218½	195	225	5½
Bengal-Nagpur ...	3,269	30.11.40	257,850	+ 24,432	34	5,714,628	5,151,941	+	562,687	"	96	83½	98½	4½
Bombay, Baroda & Cl. India ...	2,986	10.2.41	319,200	+ 62,100	47	8,731,725	7,752,525	+	979,200	"	108	99	107½	5½
Madras & Southern Mahratta ...	2,967	10.12.40	168,900	+ 6,974	36	4,144,859	3,898,385	+	126,474	"	104	97½	103½	7½
Rohilkund & Kumaon ...	571	31.1.41	64,275	+ 7,129	18	208,350	192,796	+	15,554	"	284	238	285	5½
South Indian ...	2,542	30.11.40	113,511	+ 2,966	34	3,023,661	2,706,863	+	316,798	"	93½	83	92½	5½
Various														
Beira ...	204	Dec. 1940	63,037	—	13	208,505	—	—	—	"	—	—	—	Nil
Egyptian Delta ...	623	30.11.40	10,813	+ 2,742	34	148,268	138,732	+	9,536	Prf. Sh.	7/10½	1	1	Nil
Kenya & Uganda ...	1,625	—	—	—	—	—	—	—	—	"	—	—	—	Nil
Manila ...	—	—	—	—	—	—	—	—	—	B. Deb.	53	44½	47½	7½
Midland of W. Australia ...	277	Oct. 1940	19,283	+ 4,095	17	63,169	51,806	+	11,363	Inc. Deb.	88	80	87½	6½
Nigerian ...	1,900	30.11.40	65,370	+ 15,784	35	1,314,395	1,120,441	+	193,954	"	—	—	—	Nil
Rhodesia ...	2,442	Dec. 1940	460,036	—	13	1,436,259	—	—	—	"	—	—	—	Nil
South Africa ...	13,287	4.1.41	631,471	+ 33,893	40	27,575,873	25,815,671	+	1,760,202	"	—	—	—	Nil
Victoria ...	4,774	Aug. 1940	888,289	+ 190,022	9	1,756,717	1,383,157	+	373,560	"	—	—	—	Nil

Note Yields are based on the approximate current prices and are within a fraction of ½. Receipts are calculated @ 1s. 6d. to the rupee

Argentine traffics are now given in pesos